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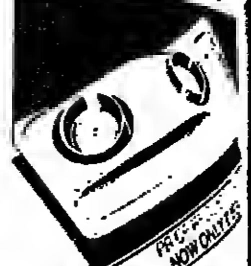
ComputerWeekly
Thursday, March 31, 1983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Wang wants sad DEC houses

by John Kavanagh

WANG has set its sights on leading minimaker Digital Equipment in the UK and aims to get DEC OEMs to help.

The move comes just as some big DEC systems houses are voicing their opposition to the company's policies.

Reg Broughton, Wang UK marketing support director, said: "We are aiming at systems houses in specific application areas and there are a number of unhappy DEC third-party firms here. We will help companies convert their systems to our VS range.

"We have done some conversions from DEC's PDP range and have not hit significant problems. We're now working with a DEC systems house to convert a package from a VAX 11/70 to a VS."

Wang is about to sign three UK systems houses and is aiming for 10 within three months.

US manufacturer Wang expects 30% of its worldwide business to come through third parties by 1990. But in the UK its growth in the systems house market will be much faster. It expects to do 20% of its UK business through systems houses and dealers in 1983-84 and after that third-party sales will grow 5% a year.

Wang's move comes just two weeks after some of DEC's big US systems houses said the company was virtually ordering them to pull out of applications markets in which they had invested millions of pounds in software development. DEC OEM marketing manager Stuart Haughtoo told systems houses that a US study showed they would have trouble selling general software.

After the meeting Neville Cerfontyne, director of DEC authorised computer distributor, Hoskyns, said this was "a blatant threat". DEC simply wanted to get into the big applications software market, he said.

John Cadge, director of consultancy Fraser Williams and chairman of the Computing Services Association's turnkey systems group, said systems houses were better at selling and supporting applications software than computer manufacturers.

He added: "There's not much to choose between equipment from different suppliers. The difference lies in things like marketing philosophy and engineering.

"From what I've seen Wang's equipment seems very attractive."

DEC does around 45% of its UK business through third parties. Last year its UK business topped £170 million. It has over 13,700 systems in the UK.

BROUGHTON . . . "We will help companies convert."

Nippon will sell Aregon's database

by Donald Kennett

JAPANESE giant Nippon Ele[illegible] is to sell Aregon's DataAce rel[illegible]nal database system for micro[illegible]puters in Japan. The company [illegible] take 120 copies in the first stage [illegible] its agreement.

Aregon has implemented [illegible] system on the NEC 5200 [illegible] 8086-based machine to run under CP/M-86 in 64Kbytes of RAM [illegible] is now implementing it [illegible] machines from two other [illegible] Japanese manufacturers.

The system was test marketed [illegible] the US last year under the [illegible] Global/2000 in which form it [illegible] supplied with its own [illegible] operating system. It is now [illegible] relaunched under the new name.

Aregon managing director [illegible] Pearce said: "The Japanese fi[illegible] generation programme put rela[illegible]nal systems very high on the [illegible]. So there is a lot of interest in DataAce.

"We could see three or four years ago that they were terrific for mainframe users, because they allow you to construct queries effectively in a simple command language and make enquiries on the fly of a fairly complex database.

"If micros are to become widespread in offices, you can't keep producing programmers to make that many systems workable. So there is a real market need for this type of product."

The company's implementation policy has been to aim for the top six micros first and it has already put the system on IBM, DEC, Tandy and Apple machines. Commodore and Texas Instruments machines will follow. "Those are the ones likely to sell in the highest volumes," said Pearce.

Forget supercomputer says Nobel winner

by Jack Gee

A SUPERCOMPUTER in response to the Japanese effort would be a mistake, according to 1982 Nobel prizewinner Prof Kenneth Wilson.

In testimony recently before the House of Representatives and in an interview last week with *Computer Weekly*, the Coroell University (Ithaca, NY) Professor of Physical Science noted that the danger of such a programme was that it could easily wind up selecting too few projects to support, aod could also easily wind up supporting a project that was "behind the general deployment of technology.

"Money needs to be spent, but in the right way, so as to assist the ordinary operation of the market," Wilson told *Computer Weekly*. As to amounts, $100 million a year — which is roughly what Japan, Inc. is spending — would be about right to start, Wilson suggested.

Moreover, wheo US industry moves into high gear on such an effort, "there is no suggestioo that the US can't beat the Japanese — it's like fielding the Yankees against the Pawtucket Indians. The problem is that the Yankees are not coming on to the field," Wilson said.

Although Josephson Junction technology has been widely touted as holding strong promise for the future, it will be extremely difficult to bring into use, Wilson claimed. Architectural developments hold more promise than components, Wilson said, although technologies such as gallium arsenide, high electron mobility transistors, and others hold promise.

WILSON . . . "Money needs to be spent."

Philips polishes its delayed office plans

by Donald Kennett

PHILIPS is finishing plans for its delayed entry to the office automation market later this year.

Its communications architecture will be based on the seven-layer International Standards Organisation model for open systems interconnection to integrate both local and wide area networking.

Originally planned for a launch in time for Hanover Fair later this month, the system will now get its first showing at Telecom 83 in Geneva in the autumn. The wide area network is to be called Synphonet, for synergetic Philips open network, the local network Synpholan, and the office automation concept as a whole Syophomation.

Philips has yet to decide which of its systems will support software to implement the higher level oetworking protocols. The P5000 word processor and the P3000 microcomputer are likely to have it from early on.

Communication with a variety of systems will also be enabled by the implementation of many formal and de facto standards on the system's node processors, which double as communications servers on the local area network.

Examples are X25 and X21 for packet and circuit switched public data networks, IBM 2780 and 3780 for a variety of other systems and the European Computer Manufacturers' Association Transport protocol for communicating with the new generation of open systems.

The local oetwork, which will support up to 1,000 terminals, is a token passing bus of the type for which draft standards are currently going through the comment and ratificatioo process in ECMA and in the US Institute of Electrical and Electronic Engineers.

It is to be offered in one Mbit- and five Mbit-per-second versions for single-channel (baseband) or multi-channel (broadband) cable systems. The broadband type is designed to coexist on the same cable as video and audio communications.

The local network is designed to be a mass market product that will compete with Ethernet in the office market, even when prices fall through the energetic efforts of its supporters to get VLSI Ethernet chips into circulation.

The US will be an important market for the system, but it will be sold in Europe first, starting with the UK, Holland, Germany and France.

CII doubts its US partner

by Jack Gee

FRANCE'S national computer company is pushing for a joint research deal with the UK's ICL and West Germany's Siemens because it is unsure of its US partner.

ICL's chairman Sir Christopher Laidlaw recently held a joint session in Brussels with CII-Honeywell Bull's chairman Jacques Stern and Viscount Etienne Davignon, vice-president of the European Commission and industrial commissioner who expressed support for a joint centre for long term research.

But in contrast to the stillborn Unidata venture along similar lines in the mid-1970s, Philips has not been invited to participate.

CII-Honeywell Bull is known to be particularly interested in a tripartite effort because it fears that Minneapolis-based Honeywell, which still holds a 20% stake in the French State-controlled firm, may be planning to move out of the development and manufacture of mainframes.

Jacques Stern of CII-Honeywell Bull bases this coocern on a recent request from Honeywell to Sesa, a leading French computer services company, to take over the American corporation's stake in a joint venture set up in the United States three years ago.

Sesa and Honeywell joined forces to market data packet switching networks based on France's Transpac network which was designed by Sesa. Jacques Stern founded Sesa and was chairman of the firm uotil shortly after he moved to CII-Honeywell Bull last year.

Stern has recently been to Tokyo for talks with Nippon Electric Corp. There are rumours in Paris that CII-Honeywell Bull is interested in a partnership with NEC because, like the French firm, it uses Honeywell licences for computer manofacture.

ICL's Laidlaw told the French business paper *Les Echos* during a recent visit to Paris that he was particularly interested in joint agreements with other manufacturers on common standards. He said there was no question of reviving Unidata.

Laidlaw added: "We are increasingly going to offer our customers equipment which can communicate with that of IBM. The reason is that at a time when the data transmissioo networks are multiplying — and are often being extended by satellites — no manufacturer can live in isolation. He has to take into account the environment."

The ICL chairman said that with the decentralisation of computer systems this requirement would become an even more important priority. He recalled that ICL was now devoting two-thirds of its R&D expenditure to distributed systems and networks.

A staff of 50 is planned initially at the ICL-CII-Siemens research centre. This ought to grow to about 100 in one or two years. Valbonne, on the French Riviera, or Munich is the most likely site.

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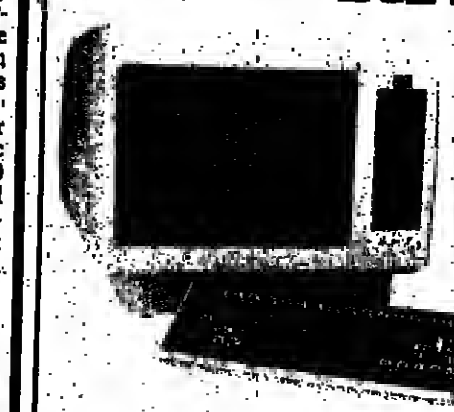
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Printed in Great Britain by QB Limited, Sheepen Place, Colchester CO3 3LJ, and published by IPC Electrical-Electronic Press Ltd., Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS.

ComputerWeekly
Thursday, April 7, 1983 Number 854 35p

BRAUN . . . "With Trilogy, I can help make history."

Labour's plan gets the cold shoulder

by George Black

LABOUR'S plan, announced last week, for a National Investment Bank to channel funds into new technology has met with a cool response from leaders of the computer industry.

The party's 15,000-word campaign document focuses on the new State bank as the centre of its strategy to boost the national IT effort and ensure that profits from it come home to this country.

The proposals include a product-based recovery of the economy through collaboration with unions to expand new technology; agreements with unions on bringing in new technology which would safeguard jobs and retrain the workforce; more cash for higher education, research councils and government scientific establishments; more spending on the training of engineers and technicians; and greater emphasis oo techoological literacy in schools.

The "New Hope for Britain" prescription, which will form the basis of Labour's election manifesto, envisages a new Department for Bcooomic and Industrial Planning overseeing a five-year national plan.

It argues: "There is no shortage of savings in the country available for borrowing today. Indeed, vast amounts of British money — more than the governmeot's total borrowing requirement last year — are flowing into overseas investment."

But both the National Computing Centre and Computing Services Association were sceptical about the Labour remedy.

NCC head David Fairbairn commented: "It's rather the mixture as before. They are quite right to say the present system isn't working as well as it should, but I have doubts about the proposed National Investment Bank. It would make more sense to aim at strengthening co-operation between existing bodies in the industry rather than creating new ones outside it."

But he supported the idea of a national plan and said Britain needed to adopt a co-ordinated, French-style approach.

CSA director-general Doug Eyeions said: "The proposals left me oeutral. I would say there was not much in it for us. There is no shortage of money for investment in computing at the moment. Look at how oversubscribed Datastream was. I don't think pension funds are all flowing overseas. A National lovestment Bank wouldn't be particularly helpful to us."

He thought that the Budget, by boosting software products and helping small businesses to start up, had done more for the industry thao Labour's plans would.

But Ted Cluff, secretary-general of the Institute of Data Processing Management, disagreed: "These ideas make a lot of sense to me. We haven't invested enough compared to other countries. Risk capital has oot been as freely available here as it has in the US. A national bank is a good idea, because in this way we can get that capital and spread the risk across the whole nation with the government as underwriter."

FOOT . . . Plans met with industry scepticism.

Burroughs man of the year leaves

by John Kavanagh

BURROUGHS' man of the year last week left the US computer corporation to join Dr Gene Amdahl at his supercomputer company, Trilogy.

Reto Braun, who built up the Memorex operation in Europe from 15 people to 3,000 and saved it from a state of near-collapse in the recession of the early Seventies, has been made Trilogy's head of international operations.

Earlier this year, as head of Burroughs' subsidiary Memorex's international business, he was named Burroughs manager of the year.

"Memorex Internatiooal is in 20 countries and last year every one made a profit, so it is a good time to leave," Braun said.

Burroughs chairman Mike Blumenthal had tried hard to keep him, he said, but the parting had been amicable.

"With Trilogy I can help make history," Braun said. "The Trilogy technology is so far ahead of anything else.

Part of Braun's job initially will be to raise extra finance for Trilogy. So far it has backing of $185 million but more money will be needed by the end of the year to see it through to early 1985, when it expects to launch its first machine.

Altergo goes to the receiver

THE UK's only major IBM software house, Altergo, called in the receivers on Tuesday following the shock departure of American managing director Leonard Levy. The affairs of Altergo Ltd, Altergo (Europe) Ltd, Altergo Services Ltd, Altergo Business Systems Ltd and Altergo Software Ltd are now in the hands of London accountants Thornton Baker.

The receivers want to sell the business assets to preserve the company's trading connections. Seven smaller Altergo operations, including that in Ireland, are not in receivership, but are controlled by those which are.

£1m for CAD

THE government's Computer Aided Design Centre is to stay largely in UK hands and will become a commercial company. A consortium led by ICL, with the UK engineering consultancy W S Atkins and the French services group SIA are paying £1 million for the centre.

Over the next 10 years they will pay the government royalties reflecting the amount of public money being spent to turn the centre from a research body to a commercial firm. That sum could reach £4.5 million. There will be no job losses.

IPC changes

The name of our parent company has been changed from IPC Business Press Ltd to Business Press International Ltd.

This change has been made to reflect the very wide range of markets covered by the 100 publications of the company, and to identify its prime positioo as the world leader of business publishing.

BT union strikes to stop Mercury

by John Kavanagh

BRITISH Telecom's most powerful union went on strike on Tuesday to stop its private rival, Mercury, and to challenge government plans to sell off Telecom.

The long awaited showdown between the government and British Telecom and its unions is to be fought over the linking of the privately-owned Mercury communications service to the national network. It follows on the heels of fighting talk in the Commons by Information Technology Minister Kenneth Baker in the Telecommunications Bill debate.

Oo the unioo front it emerged that the Post Office Engineering Unioo, POEU, was being backed by the National Union of Railwaymen and the white-collar ASTMS.

The NUR had already promised support — Mercury cables will run alongside railway tracks — and its executive committee is now discussing the passing of the Telecommunications Bill and seeking talks with other unions. And ASTMS is arranging talks with Cable and Wireless, one of Mercury Communications' owners, where it has many members.

The POEU actioo is aimed at the heart of the UK's financial community and the government. This week it introduced selective strikes in the City and Westminster areas of London in protest at the Telecommunications Bill.

BT has contracted to link Mercury to the national network in the next few weeks but this is being fiercely opposed by the POEU. But Baker said in the Commons: "British Telecom knows the government expects it to honour its agreement with Mercury and the government is confident it will be honoured."

He added that union action against Mercury would be "a naked attempt to defend a vested interest".

Later, BT said it had signed the agreement with Mercury "of our own free will".

The corporation added: "We have confidence in the common sense of our staff."

The Telecommunications Bill got through its third and final Commons reading by 286 votes to 241. It now passes to the Lords.

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Thoughts of Easter hols keep MPs to rural matters

by our Parliamentary Correspondent

THE House was keeping a sharp eye on the prospect of getting away for Easter and MPs tended to concentrate on the things that affected them directly.

In the case of the Telecommunications Bill this turned out to be the provision, or lack of it, of rural telephones.

The government therefore last week added a clause to the Telecommunications Bill imposing a "duty" on British Telecom to maintain rural telephone boxes and hold prices down after privatisation. But the clause failed to quell fears among MPs of all parties that uneconomic services of vital importance to remote communities might be butchered.

Stanley Orme, Labour industry spokesman, said it was evident that the government had not yet got the Bill right. The government's proposals would result in a two-headed company which would throw into jeopardy the loss-making services.

Conservative MP Peter Temple-Morris said that he was concerned about whether the new clause measured up to the pledges given during the committee stage. There was concern in rural areas that BT might get rid of as many rural telephone boxes as possible before the Bill became law in order to become lean and fit for the sale of shares to the public.

Thomas Ellis, SDP Member for Wrexham, said that he was fundamentally against the Bill and would vote against its third reading. The new clause was not a significant improvement.

Under Secretary of State for Industry John Butcher claimed that the wording of the new clause would make BT liable for rural telephone services.

LSI cuts its last six sales jobs

by Philip Hunter

LSI Computers has dropped its remaining UK sales force of six and will rely completely on franchises to sell its business computers. The company will this year set up 15 new franchises to increase the total from 12 to between 25 and 30 covering the whole UK.

A franchise works like the branch sales office of a major manufacturer or distributor, except that it is independently owned. LSI gives the holder, usually a partnership of two people, exclusive rights to distribute its computers in the area, in return for a pledge not to sell other makes.

"It is difficult in an expanding market to recruit and keep high calibre end-user salesmen," says LSI marketing director David Johns. "The franchise is more attractive because people can build their own business."

The franchise would manage a small dealer network in its own territory. "We will assist in setting up a network of 10 to 15 dealers," promises Johns.

Another problem with end user salesmen, says Johns, is the difficulty of keeping customers loyal to the product, when bigger manufacturers like IBM are able to offer round-the-clock hardware support.

The franchise would organise its own software support in the area, with hardware support coming from LSI's own field engineers.

Some of the new franchises will be run by ex-LSI salesmen, and Johns says there were no compulsory redundancies. More salespeople are wanted for the new franchises.

LSI products range from the M-Two micro/minicomputer system for between £6,000 to £15,000 to the smaller desktop M-Three and M-Four for about £2,000. The larger M-Two the franchises will normally sell direct to the end user, but the desktops will more often be sold through the local dealer network.

Johns promises that the decision to go all out for franchises will not mean price increases caused by the addition of an extra link in the marketing chain.

JOHNS . . . Difficult to recruit high calibre end-user salesmen.

Motorola 32-bit chip is 'in sight'

by Robert Parry

THE advanced chip battle is heating up as semiconductor manufacturers rush to get their 32-bit micros on to the market. Latest to come forward is Motorola, which despite trailing National Semiconductor on likely sampling dates for a true 32-bit processor is confident of maintaining a comfortable lead.

"We have done a lot of design work on the 68020," says Motorola's microsystems division general manager Murray Goldman of the 32-bit external bus version in Motorola's 68000 family. "It is within sight for a lot of our customers."

Although NatSemi looks like being up and running with a 32-bit processor for high volume applications before Motorola, it is not seen as a real threat. A lot of people believe NatSemi's 16000 has the nicest architecture, says Goldman, but that is not enough to sell a chip. He places great store on Motorola's credibility, second source support and the third party software it has gathered.

Goldman is perhaps well placed to assess the threat posed by the NatSemi chips. Motorola runs a design centre in Tel Aviv, Israel, where work on the all important peripheral devices is located. The Tel Aviv operation is run by Zvi Soha, who used to head NatSemi's 16000 design centre, also in Tel Aviv.

Samples of the 68020 are due early next year — a slight slippage on the fourth quarter 1983 prediction Motorola made when formally announcing the device last March and four or five months after NatSemi expects to be sampling its 32032, the 68020's most direct rival at present.

But Goldman is confident that Motorola is living up to the planned progression through the various permutations of external bus width and internal features than it set down in 1982.

His US design manager, Gary Daniels, has even gone as far as casting the predicted sampling dates in concrete, so sure is he of meeting — or beating — them.

"We were four months early with the eight-bit bus device (the 68008) and delivered samples on schedule for the virtual memory 68010," says Goldman.

GOLDMAN . . . Nice architecture is not enough to sell a chip.

Gould pushes into commercial arena

by Philip Hunter

SCIENTIFIC and engineering minimaker Gould has mounted its push into the business market with a range of financial and office information software. And the company last week set up a separate management information systems division to guide its long-heralded move into commercial systems.

The company's key development was its implementation in late 1982 of the Unix operating system, which gives its machines access to many commercial software packages already written.

New software announced includes the office information system PROS, which will be welded into a coherent commercial offering with other packages including the Transaction Processing system No-Code and the EPS Financial Modelling system announced last year.

"We had to open up a new market to maintain our annual growth rate of 35% to 40%," says marketing manager David Lines. "We previously had one or two products at our fingertips that were commercially-oriented, but not the proper push we are organising now."

One such commercial product is the Seed database management system announced by Gould in January 1983. This was developed by International Database Systems and offers the user full interactive and simple data-retrieval commands.

Gould already had the Total database system developed by Cincom, and the Rapport relational database system developed by Logica, so could claim to offer the three most popular UK database managers.

Gould claims that its powerful 32 series minicomputers outperform both its main rivals Digital Equipment and Perkin-Elmer, and the new software should make them formidable in the commercial marketplace. The SEL 32/87, of which 10 have been sold in the UK since last July's launch is three times as powerful as the DEC Vax 11/780, claims Lines. And even the older and smaller 32/67 is comparable with the Vax 11/750, in the middle of the DEC range, he says.

The snag is the cost, with the top range 32/87 costing £205,000 for a configuration with two Mbytes main memory, 300 Mbyte disc drive and 45 ips tape drive. By contrast the two Mbyte Perkin Elmer minicomputer, although not so fast, costs under £100,000 for a comparable configuration.

French consumers shrug off micros

by Jack Gee

THE French market for microcomputers seems set for slow growth because of the public's reluctance to match the enthusiasm of British and American consumers, according to a study published by France's authoritative trade publication *Electroniques Actualites*.

The magazine cites the limited ambition of IBM which expects to sell only 7,000 of its Personal Computers in France this year and forecasts that sales of all makes will range between 35,000 and 60,000.

The only domestic manufacturer of any weight in France, R2E sold about 10,000 units last year, equivalent to about half total French output. Far behind in the race were Leanord (2,500), Goupil (2,000) and, straggling in the rear, Darlay, Symag and Matra-Tandy each with sales of 1,000 or less.

Electroniques Actualites compared the 150 manufacturers now selling in France with the activity of the UK market where 300 brands are competing for business.

R2E's microcomputer ambitions also seem to be threatened by its decision to get rid of its US subsidiary. In France R2E is now being absorbed by Compagnie Machines Bull's office automation division.

Meanwhile more foreign manufacturers are swamping the French market, according to *Electroniques Actualites*. It named the leading challengers as Olivetti, Texas Instruments, Canon, Nippon Electric, IBM, NCR, Hewlett-Packard and DEC.

Apple was already well entrenched in France before the arrival of the newcomers.

"The French market seems to be cantankerous and reluctant to accept the micro," said the journal.

Computer Weekly, Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS. Telex: 892084 BISPRS G

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CIRCULATION
Terms of circulation control: Computer Weekly is sent free of charge to the Computer Weekly ...

Published every Thursday. Registered at the Post Office as a newspaper.
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Doubts cloud the new ICL scheme

by George Black

ICL's Business-29 software scheme, launched last week in collaboration with 11 independent developers, is claimed to be the first of its kind in Europe.

But behind the public applause of the software houses for ICL's new initiative, doubts linger about how it will work in practice. Some are worried that conflicts could develop between competing organisations; some that ICL could be using the knowhow it gains from the venture to build a stronger position in the software world for itself.

ICL spokesmen at the launch were ambiguous about whether they had appointed houses whose products they would back or had chosen particular solutions for user problems. It is thought they will be offering all their customers at least two paths.

If current talks with the biggest outfit in the field, Management Science America, lead to its being added to the list, doubts about ICL's ability to remain "honest broker" will be increased.

ICL chiefs are not denying the possibility of clashes. Product marketing director Ninian Eadie said: "We can't select everyone, but we would also want not to offend anyone."

At the end of the day it would be the customer who would have to decide which product to use, he said.

Paul Methven of RTZ Computer Services said: "I am in favour of the scheme, although it does make me a bit nervous — not just about our traditional competitors like PPL, but even more about what ICL's men will be learning about us."

Package Programs' Clive Gregory commented: "It has been stormy water getting even this far and there is still a great deal to be done crossing the t's and dotting the i's. ICL is being more open than it has ever been in the past, though this isn't to say it has finally convinced anyone.

"They say they are going to tell us which areas they will compete in. So there is guarded optimism on our side."

Steve Valdez of Data Sciences International said: "There is a problem about confidentiality. ICL salesmen could tip off one software house about what another is doing. But the danger is probably no greater than it would be without Business-29. And you've got to take your chances in an imperfect world. I'm as happy as one can reasonably expect to be in the circumstances."

The scheme involves a set of accounting packages which ICL will sell to its business customers for use on ME29 mainframes.

The systems, priced between £18,000 and £50,000, will be promoted by a joint marketing venture between ICL's Traderpoint third-party sales organisation and well-reputed suppliers.

EADIE . . . "We would not want to offend anyone."

Apple sets up Irish sales corps

by Tom MacSweeney

APPLE Computer is to set up its own sales and marketing force in Ireland from mid-June. It is recruiting a manager to head the new operation, to be based in Dublin.

The company has already invested over £10 million in two manufacturing facilities in Ireland. The plants are at Cork city and Millstreet in Cork County. Cork city computers go to the European market, Australia, Canada, South Africa and Hong Kong.

Millstreet produces keyboards and peripherals for Apple machines.

Apple employs more than 250 people in Ireland, and the company has won a government contract to supply computers to secondary schools in the country.

Leith Computers is jointly involved with Apple in the new marketing arrangement, and will be supporting the dealer network.

European sales manager for distributor sales, John Vivian said the new sales and marketing operation was a vote of confidence by Apple in the Irish market.

Burroughs links with French State firm

by Jack Gee

BURROUGHS may soon sell French telecommunications products in a co-operative venture between the US giant — No. 3 on the French computer market — and France's State-controlled CIT-Alcatel company, says Marcel Louvet, chairman of Burroughs-France.

Stressing Burroughs' eagerness to become a fully-fledged partner in France's socialist economy, Louvet said his firm hoped to sell peripherals to Cii-Honeywood Bull.

CIT-Alcatel is a subsidiary of Compagnie Generale D'Electricite which was nationalised last year.

The chairman of Burroughs, which has been operating in France for 75 years, said the company was keen to be a "good citizen" and was trying to balance its exports with imports.

Last year Burroughs-France increased exports by 64% and these now represent about one-third of turnover which in 1982 reached FFr1,564 million (£150 million), a 24% jump since 1981.

Burroughs has a 5% share of the French market compared with 50% for IBM and 30% for Cii-Honeywell Bull. The French subsidiary has set itself a target of becoming the multinational's best performing unit outside the US by 1990 — ahead of those operating in Britain and Japan.

Burroughs-France has recently moved into modern headquarters at Cergy-Pontoise, 30 miles from the heart of Paris, in a new office and industrial suburb.

The French subsidiary plans to increase turnover by between 17 and 20% over the next few years. But, speaking before the recent French austerity measures were announced, Louvet said he hoped to increase sales by up to 25% if the national economy revived.

Louvet was reluctant to disclose the profit level of his company, but he said Burroughs France expected increased profits in 1983 after making a loss in 1981 followed by a profitable 1982.

The French Ministry of Industry is studying Burroughs' proposals to market French telecommunications products and possibly software, believed to be a unique arrangement.

CDC takes a stake in videotext company

by Howard Karten

CONTROL DATA is to invest in Source Telecomputing Corp, a videotext provider which is 51% owned by the Readers Digest Association. CDC recently signed a letter of intent committing it to invest an amount "in the five to ten million dollar range" in Source Telecomputing, to a CDC spokesman.

The investment is strictly an investment, the spokesman emphasised, and in no way an acquisition.

Source, with headquarters in McLean, Virginia, a Washington DC suburb which houses many hi-tech firms, began operations four years ago as America's first commercial videotext-like service. Since then, Source has undergone several rocky financial periods.

The CDC spokesman said Control Data was the world's largest data services organisation, currently providing a commercial time-sharing network, as well as other networks, such as one for selling tickets via computer, another that provides loan processing and credit certification, and so on.

But CDC has no consumer-oriented data services operation, and the company has not previously been particularly active in videotext.

Source uses Prime computers to service its subscribers.

The CDC spokesman said the investment involved no quid pro quo, and was intended primarily to "provide a bridge among three enterprises that have something to offer each other" (in terms of knowledge).

There is no reason to believe that CDC's actions reflect anything beyond a standard business investment. But Control Data chief executive William Norris is well-known for his interest in good social works by corporations, and has occasionally come under fire from the investment community for CDC-backed ventures with a "social" orientation which have not gone as well as might have been hoped.

■ Can computers solve the problems of our inner cities? — page 20.

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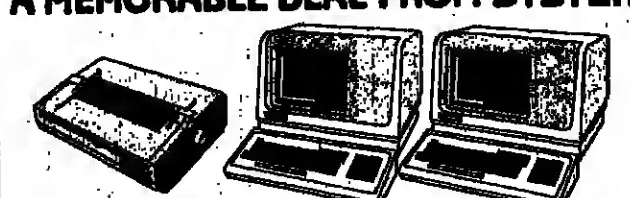

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Software engineers get charter chance

by Philip Hunter

SOFTWARE specialists can for the first time call themselves chartered engineers following recognition for a postgraduate Chartered Engineering training scheme by the IEE (institution of Electrical Engineers). And Racal Electronics is the first firm to set up its own training under the scheme.

"The title will give a measure of the guy's professional ability," says Racal graduate development manager Vic Robertson. "Too many software people are narrow in their outlook. At least those who have qualified as chartered engineers will have demonstrated that they appreciate the links between software and hardware testing, and that they are able to take a broader view of problems," Ruhertson says.

The company will recruit a small number of graduates each year, and make sure they receive two years' training geared towards membership of the IEE. When their training is over, the software engineers submit a summary of their work to a course tutor at the company, who will also be a member of IEE.

DEC bows to user pressure

by Robert Parry

DIGITAL Equipment (DEC) has bowed to market pressure and agreed to support add-in memory from a rival supplier. DEC Field Service will now install and maintain National Semiconductor's range of DEC-compatible products on UK installations.

"Some of our customers are meeting their needs by purchasing NatSemi products," says Grey Carlow, DEC's UK field service new ventures manager. "We believe we can offer our users a better service if we can look after their site as a complete entity."

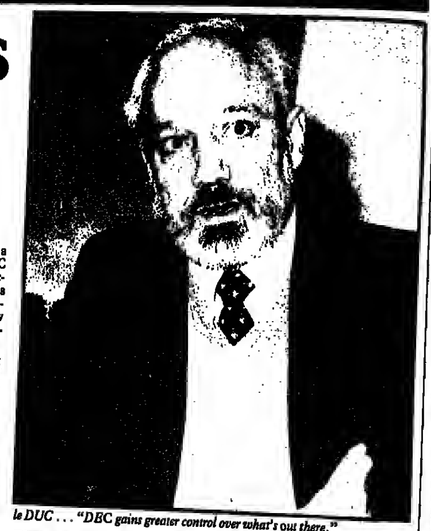
Previously the installation of "foreign" memory has been a potential problem for DEC's service arrangements of its kit.

And DEC is set to get a chunk of users' unused maintenance money. For the users who plugged-in boards from other suppliers have often not spent the money they set aside for maintaining these systems.

"The whole thing will now be a lot easier for the user of non-DEC memory," says Philip Jones, director of Passim, one of NatSemi's two distributors for the DEC-compatible boards. "DEC can now cash in on this unused maintenance money."

The move should also mean that DEC will find it easier to sell CPUs, adds Harry Case of NatSemi's other distributor, Decade. For example, it can sell Vax machines in minimum memory configurations, with memory requirements being topped up by add-in board from stock held by NatSemi and its distributors, which saves customers the bother of waiting for full memory from DEC.

"By endorsing the NatSemi products, DEC also gains greater control over what's out there," adds Bill le Duc, NatSemi's Product marketing manager for the memory systems. "It's part of DEC's general trend of moving away from OEMs towards end users."



le DUC . . . "DEC gains greater control over what's out there."

DEC already supports NatSemi add-in memory in Germany, but only through an informal arrangement. There is no pre-commitment to support, as there is now in the UK. But le Duc intends that the deal here works so well for DEC that it will extend its endorsement to other countries.

Jobs saved in Computel deal

by John Kavanagh

NEARLY 40 jobs have been saved and 30 lost in the takeover of the ICL-based bureau Computel by rival Beaufort Computer Services.

And Computel's former owners, the John Mowlem and Costain building and engineering groups, have picked up the tab for the redundancies and for Computel's losses, leaving Beaufort clear of the liabilities of its new business.

In December Beaufort bought Computel's business and name and some of the assets, notably an ICL 2966 mainframe and peripherals. This mainframe is now being moved to Gloucester to join Beaufort's own 2966.

Meanwhile, Mowlem and Costain have formed a new company, Bracknell Computer Centre, as a temporary measure to run the other Computel machine, a 1960, for Beaufort until the work is transferred to the 2966s.

"Most of the staff will leave by the end of April," said Philip Stevens, head of the old Computel, who is retiring. "Most of them are getting jobs, although the operators are finding it more difficult.

"There's no bitterness, only disappointment after having put so much effort into building up something good," he said.

Kevin Kelly, head of marketing at Beaufort, said 37 jobs had been saved. Many of the people would be working from Computel's office in Bracknell, Berkshire. "We have kept all Computel's clients and won some of its prospective customers," Kelly said.

The takeover has created a £9 million bureau with around 180 staff. Computel hit trouble at the end of 1980 when it lost a major customer, British Telecom. After that blow staff numbers fell from 170 to under 100.

Beaufort is owned by a US insurance firm and specialises in systems for the insurance business.

Viewdata is set for an American Dream

by Donald Kennett

Viewdata and teletext services will enjoy a mass market bonanza in the US around 1987, according to market researchers Frost and Sullivan.*

A report from the company predicts that, as happened in the UK, broadcast teletext will take off first. Services will reach between 37 million and 52 million household in 1987, accelerating as teletext decoders become standard parts of all television sets.

Viewdata services will attract most of their subscribers from among microcomputer users, the report says. By 1995 micro owning subscribers will number between 11 million and 16 million, but by the year 2000 this number will leap up to 41 million, each spending between $14 and $28 a month.

Another 15 million to 20 million subscribers will have adapted television sets rather than microcomputers.

Cable television based teletext services occupying a whole channel each (rather than sharing part of a video channel) will generate service revenues of $140 million to $250 million a year by 1995, with advertising revenues on top of that figure, assuming that half of all households are connected to cable networks.

Providers of timesharing services to home computer users, such as The Source and CompuServe, will continue to support a variety of display standards, rather than selecting a single videotex display standard, the report says. But for broadcast teletext, the North American Presentation Level Protocol Syntax proposed by AT&T will probably predominate.

Despite claims from AT&T, CBS, Time Inc, Knight-Ridder and supporters of the Canadian Telidon system that high resolution graphics capabilities were essential, there was not much evidence in support, the report says.

The report also ignores the business market in favour of the domestic.

*"Videotex and Teletext Home Market in the United States. Report number 1091. 269pp. $1,250. Frost and Sullivan, 104-112 Marylebone Lane, London W1M 5FU. Tel: 01-486 8377.

Hatfield Poly man makes it to Minnesota

by Philip Hunter

DALE Johnson, a mathematics lecturer at Hatfield Polytechnic, has been made associate director of the US Charles Babbage Institute, which was set up to record and study the history of computer science.

Johnson joins Babbage at the University of Minnesota in September after seeing this academic year out, and will work on preserving and adding to historical records, some of which are held on a computer database.

He will also help choose the Babbage fellow sponsored annually to study the history of data processing. Any university graduate in the world is eligible for the Babbage fellowship, which is awarded with a $5,000 grant on the basis of the idea for a project on computing history.

Johnson says he was chosen for the job because of his extensive work on the history and philosophy of mathematics which led to research in the theory of computer science including database systems. "The Babbage post will be ideal," he says, "for continuing this study more extensively."

JOHNSON . . . "Ideal post."

Babbage was founded by key industry pioneers including Gene Amdhal and Walter Bauer, and lives on the subscriptions of members and the sponsorship of companies like IBM, NCR and Xerox.

Babbage keeps historical information about the industry in various forms including database as well as extensive documents and scientific papers.

Recently, the institute recorded a series of 42 interviews with computer researchers.

SALES BRIEF

UK firms take orders from Royal Navy

THE Royal Navy has placed [illegible] major orders for computer [illegible] in the last month. UK-[illegible] Computer Technology of Hem[illegible] Hempstead was chosen to supply computer for Project Nivelan [illegible] val Armament Weapons Data [illegible] and Analysis System), which [illegible] with preparation of weapons [illegible] issue and their subsequent [illegible] reoance.

The Navy has meanwhile [illegible] to British Medical System [illegible] Basingstoke, Hampshire [illegible] computerised patient admissi[illegible] tion system at its Stonehouse Ho[illegible] pital in Plymouth. This is the [illegible] BMS system to be bought by [illegible] services hospital and is now [illegible] sidered standard for Naval ho[illegible] pitals.

Super bargain

CRAY Research has sold such [illegible] Cray-1/M supercomputer for $[illegible] million. The buyer this time [illegible] Phillips Petroleum based in Ok[illegible] homa, which follows above [illegible] other organisations to take adv[illegible] tage of price cuts announced [illegible] Cray last year.

Secure sales

ICL has made two big sales wor[illegible] a total of £190,000 through [illegible] Traderpoint sales scheme [illegible] ing third party software house [illegible] Paramount Insurance and [illegible] surance brokers Rushton. [illegible] Paramount Insurance has ordered an ICL ME29 mainframe with [illegible] motor insurance package writ[illegible] by React Management Servic[illegible] and Rushton is to have two IC[illegible] DRS 20 distributed microco[illegible] puter systems with React's Brok[illegible] 2000 software.

Council update

STOCKPORT Council has ordered an R2800 Telecentre with a 128K minicomputer and seven workstations from Redifusion. The minicomputer replaces Univac punch card equipment for local government applications including payroll and rate rebates.

Philips in store

DEBENHAMS stores has gone to Philips for £94,000 worth of colour viewdata terminals to install in its carpet departments. The terminals will be part of a viewdata ordering system designed by Dec, Debenhams' computer subsidiary, and will be attached to a CMC Reality computer.

Going Dutch

THE UK subsidiary of US minicomputer maker Harris has sold eight Mind distributed systems to a Dutch building group for about £450,000. The group Hollandsche Beton will use the computers for communicating with its 15 Dutch subsidiaries.

Zebra dealer

GENERAL Automation UK has signed up its first UK dealer for the recently launched Zebra family of microcomputers. M&O Business Systems, a turnkey house based in Abingdon, Oxon, has picked up the dealership worth £250,000 for the microcomputers, which uses the Pick and Xenix operating systems.

BT's choice

AN Essex-based maker of electronic controls has won £250,000 of business from British Telecom. Elremco has been chosen by BT to supply electronic equipment for the new generation of telephone systems.

Mammoth deal

GTE TELENET Communications of Vienna, US has been chosen to supply all the data communications equipment for the US Department of Agriculture until 1990 in a mammoth contract worth an estimated $160 million.

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Designing an IMS/DLI database	5 days	£500	25.04.83, 10.10.83
Designing an IDMS database	5 days	£500	09.05.83, 27.06.83, 19.09.83, 28.11.83
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Atari's Kay warns of profit lag

by Howard Karten

THE lag between conceiving a hi-tech product and realising a profit from it can be as much as five to 10 years. And, it may not be easy to recognise and nurture a winner, even then, so businessmen charged with realising a return on an investment in technology should be prepared for a lengthy wait.

This was the message delivered by Alan Kay, chief scientist and a vice president of micro maker Atari to a well-attended Massachusetts Institute of Technology symposium on the reality of artificial intelligence last week.

With a generous sprinkling of good humour, Kay recounted some of the probably unavoidable misadventures he witnessed as a researcher at Xerox Parc Palo Alto research centre.

Some of these included bringing to market the 850 word processor instead of the Alto, a state of the art device featuring a high-resolution VDU, a mouse, a bit-mapped screen, and other advanced features, apparently failing to bring to market the Dynabrook, a small computer the size of a thick writing tablet, and apparently failing to market a semi-portable computer built several years ago which looked remarkably like an Osborne unit.

Part of the problem, Kay averred, is that predicting the future accurately or usefully is a particularly difficult task, and one which has often been done poorly even by executives at organisations with presumed expertise in marketing technology.

As an example, Kay noted, most observers failed to predict the size and even the phenomenon of personal computers.

One solution, Kay told the mostly-Fortune-100 company attendees, is to "invent" the future. Moreover, one way to do this is to capitalise on what Kay claimed are two universal human themes, or drives: the desire for improved communications, and the desire for fantasy.

And that, Ksy said, is a world where things are simpler and more controllable.

KAY . . . "Businessmen may endure a long wait for profits on technology investments."

Where is the flood of BT applicants?

by Kevin Cahill

LIBERALISATION of the British Telecom network has not produced the flood of applications for equipment approval expected by the government.

John Vevers, director of BABT (British Approvals Board for Telecommunication), the body set up to test devices which will be attached to the BT network after liberalisation, said only one phone and one jack plug have been submitted for approval since last October.

Vevers said he had staff and equipment standing by to begin work on any equipment submitted. So far BSI standards for equipment cover phones, extensions and jack plugs. The specifications and standards for PABXs and more complex exchange and data equipments are not expected to be ready until later in the year.

But the BABT has had its doors open for six months and Vevers said he was astonished by the lack of work.

Most industry experts expect a flood of cheap devices from Hong Kong and the Far East, and many thought that apparently high charges for testing and licensing equipment were to deter such an "invasion" of imports.

No so, says Vevers. The set of specifications which covers simple extension telephone is 50 pages long and the minimum lab time for evaluation is three days.

Vevers was responding to recent criticisms, made to government ministers, that the test fees were too high and the delays in getting approval were substantial.

According to reports from the US the average cost of getting approval for a simple extension phone is about $1,000, or about one-third of the UK charge.

Industry Minister Patrick Jenkins said the telecomms industry had "not heard the end of the matter" of the BABT charges when he introduced the £5 million funding for telecomms innovation after the Budget.

But Jenkins and other ministers must now wonder whether their whole notion of a free-for-all after liberalisation will now take place.

The only producers likely to be deterred by the BABT charges are small UK suppliers, and not many of those appear to exist at present. For a large company like Plessey, £2,000 to £5,000 is insignificant.

The British lack a micro plan

by John Kavanagh

THERE is a lack of microcomputer strategies among British companies and end users are buying their own machines with little consultation with the computing department as a result.

This is confirmed by a survey of National Computing Centre (NCC) members, which shows that 82% of firms with traditional data processing departments now have end users buying their own microcomputers.

And it is data processing managers who should be producing the strategies, according to Ted Cluff, secretary-general of the Institute of Data Processing Management (IDPM).

The NCC survey shows only a third of users call in the data processing department for consultancy, development and support when they get their first microcomputer.

Around 15% never call on the computing professionals and half consult the experts only sometimes.

Yet in 62% of the cases the data processing department has to ratify the user's decision to buy a microcomputer.

The report concludes that computing staff "do not yet have a well determined role to play in the installation of micros" and that their involvement with end users "appears to be on an ad hoc basis".

Cluff agreed with the findings. "We're nagging DP managers relentlessly on this," he told *Computer Weekly*.

"They're the ones who should be devising the strategies. Too many just sign off user requests for micros for an easy life: they haven't got time to go into each case.

"But there should be proper guidelines so users buy machines which are compatible with each other and their firm's mainframe.

"Ideally the DPM should deal with one micro and one operating system. That way he can have a spare in the cupboard.

"The trouble is that when the user manager or the person he's sent on a Basic course leaves there's no documentation and no one knows what to do with the micro.

"DPMs agree in principle with the need for rules but they don't go out and lead; instead they wait and react.

"But corporate management are waking up to the fact that the micro might not be a good investment for the company as a whole and they're putting pressure on the DPM."

Meanwhile, the NCC survey shows the use of terminals is growing rapidly.

Local connections to end user departments are expected to grow by a third this year and by 75% between 1983 and 1987. Remote links will grow by 27% this year and 83% by 1987.

The financial sector easily leads the automation league, with 17 terminals for every 100 non-computing staff.

In second place is education and research, with 11.2. These two are way ahead of engineering and retail and distribution trade, with 4.5 each. Government installations trail with 1.1 terminals per 100 staff.

Warring software firms settle security feud

by George Black

THE two-year dispute between Cambridge Systems Group and SKK over a security software product has been settled.

The two American firms clashed in 1981 in their attempts to corner the market for a security programme to run with IBM's MVS operating system. The IBM user group Share had recommended in 1977 that the company should look into developing a security system.

Dissatisfied with IBM's response committee member Barry Shrager decided to tackle the problem himself. With his colleagues Ebehard Klemens and Scott Krueger he developed ACF2 and set up a business called SKK in Chicago to promote it.

ACF2 was designed to control data sharing and provide protection to the computer system through a chain of passwords allocated to terminals, individuals, departments and sites. Its aim was to avoid technical snags which were thought to have cropped up in IBM's own RACF product, as well as to compete with the European Software Company's solution called Secure.

In 1980 the Cambridge Systems Group of California obtained marketing rights from the developers and recruited Zoran Pirjevec from Pansophie to sell ACF2 in Europe.

When SKK and Cambridge fell out over marketing policy in May 1981, Pirjevec moved to SKK to take charge of its European selling operation. SKK won an injunction in a US court to stop CSG selling the programmes. But in November of that year the injunction was overturned.

Now the territory has been divided between them in an out-of-court agreement. CSG is to sell ACF2 in the US and Canada, while SKK sells it in Europe and the rest of the world. Worldwide support will be provided by SKK.

There are 150 users of the product in North America, about 16 in Australia and 70 in Europe. British customers include ICI, British Leyland, British Aerospace, Midland Bank and Esso.

Doctors get their own DP doctor

by John Kavanagh

DOCTORS in general practice are to have their own computing adviser. A Nottingham GP, Dr Norman Stoddart, has taken the part-time job at the Royal College of General Practitioners, a professional and standards body which has half the UK's GPs among its 12,000 members. The job, called ICI Computer Fellow, is being funded by ICI Pharmaceuticals.

"GPs are in the dark about computing, but we expect explosive growth this decade," said Michael Drury, the college's research division chairman and professor of general practice at Birmingham University. "There is a lot of interest in what computing can do for a general practice and we expect 5,000 systems to be installed in the next few years."

Some GPs are now installing microcomputers under a £1.5 million government scheme to put 150 machines into general practices.

Stoddart will advise on matters ranging from systems design and costs to data protection. He saw the value of computers when setting up a medical records system in the mid-Seventies. He took a programming course in 1980, then installed and modified a microcomputer system for his practice.

Stoddart added that he also liked "playing about on a computer at home."

Drury said the college had asked for computing and medical knowledge and teaching skills from the applicants for the advisor's job. Several computer people had applied, he said.

The job is being funded initially for a year although the college hopes the backing will be extended to two years.

STODDART . . . Using computers at work and at play.

BT's Ramis buys top £1 million

by Donald Kenoett

BRITISH Telecom has ordered 15 copies of Ramis-11, the database management system, from Mathematica Products Group, in the largest European sale of the software product to date.

With the three copies already held, this brings BT's spending on the system to over £1 million. The further copies will be spread around the country on IBM mainframes, for BT's 1,250 Ramis users.

BT has been a customer of Mathematica for 10 years and uses Ramis as a tool for both DP professionals and end users. It runs one of the UK's biggest computer services bureaux.

BT's copies run on various IBM machines ranging from the 3081 up to the 4331 under TSO and VM/CMS operating systems.

The 10 regions have had most of their work done at large centres by the data processing executives. But several now have their own smaller hardware and others are likely to follow suit.

Calma given blank cheque in glory bid

by Andrew Thomas

A US CAD/CAM systems house has been set the target of becoming the world number one by 1987, and its parent company has given it a blank cheque to achieve it. California-based Calma currently holds about 10% of the market, ranking third behind IBM (18%), and Computervision, which lays claim to over a quarter*.

Calma president Bob Benders said that industrial giant General Electric, Calma's parent since early 1981, would make available whatever cash was needed to put Calma in the number one slot within four years.

"The world CAD market will be worth $5 billion by 1987," said Benders, "and Europe will account for 20-25% of that. By that time, Calma will be a billion-dollar company.

"CAD installations have traditionally been standalone, turnkey systems, but last year that suddenly became unacceptable. It's no longer enough to be just a good builder of hardware, users are demanding a more integrated approach."

Calma's new buzz-phrase is "factory of the future", and the most significant of its new products must be CalmaNet, a networking system aimed at linking designers, engineers, and manufacturing, to a common database.

Significantly, Calma's two other new products, a 32-bit, Vax-based system, and a cheaper 16-bit machine, both interface with CalmaNet and can talk to each other via a Hyperchannel. Calma's software is built around 64-bit architecture, so that the cheaper system can run the same software as its bigger brother, but slower.

"General Electric has invested $534 million in the factory of the future, and will be the first user of the system," said Jim Carro, Calma's vice-president of European sales. "We see our hardware as vanilla ice cream. It's pretty good, but when you add the toppings – the software – it's terrific.

"Our CAD systems don't taste too good, but try asking an ice cream sundae to design an aircraft wing."

* Figures from US CAD/CAM research organisation Daratech.

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If you're thinking of buying new terminals, Data Logic has some important news for you. Especially since there's been a bit of a stir in the business lately.

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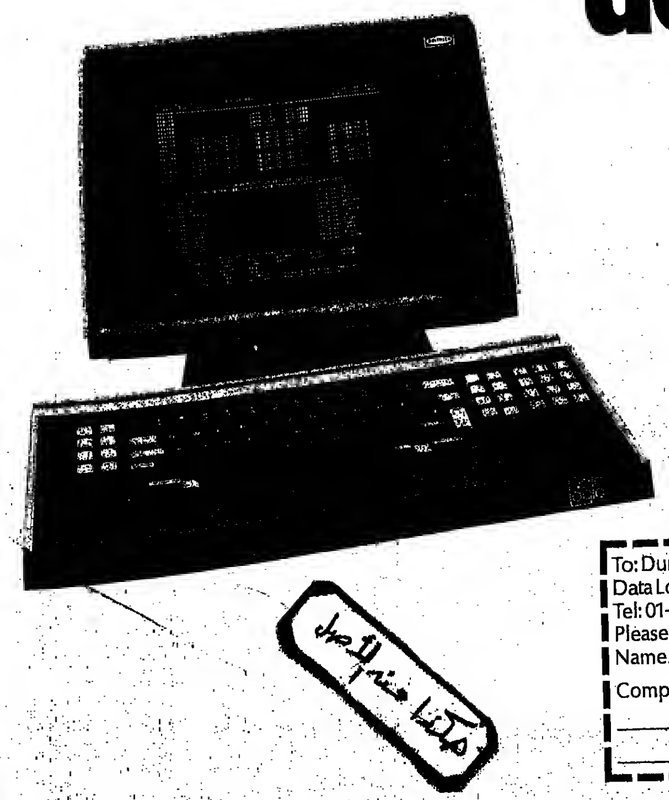

If you want colour terminals we have three models, the latest of which is a 3440 character screen (with 1920 and 2560 characters configurable on the same display). We also have a new keyboard with single-stroke function keys, performance monitors to collect comprehensive network statistics and a low-cost display attached printer.

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Data logic

SOFTWARE FILE

Top US software house bought out

McCORMACK and Dodge, the big US mainframe accounting software house, has been bought out by Dun and Bradstreet.

Dun and Bradstreet, best known for its company credit checking business and owner of US-based computer magazine *Datamation* and bureau National CSS, paid $50 million in cash for M&D and will give further sums based on the software house's future performance.

M&D European director Mark Bennett said, "We either had to go public or be taken over. In the US public corporations are constantly looking over their shoulders and worrying about dividends, which would have meant we could not plough enough into research and development."

Now the applications developers have the backing of an organisation with more than $1.4 billion a year revenue from business information. Its own income last financial year was £38 million.

Dun and Bradstreet, keen to get a firm hold on the computing world, in 1979 took over the time-sharing bureau National CSS, whose European arm is known as CSS International. National recently spread its operation into software package sales, notably the Nomad-2 information centre, an IBM VM/CMS and plug-compatible system. It also owns the Californian Zytron, a microfiche retrieval business.

The intention is that M&D will continue to be run as a separate business, with only the founding partners being responsible to Dun and Bradstreet.

At the same time M&D is teaming up with Alghanim Information Management Services to get its products into the Middle East. The Kuwait software company will sell and support M&D's range of packages throughout the region.

The surprise takeover was announced at the same time as ICL's launch of its new Business-29 marketing agreement, in which M&D is involved.

M&D is one of 11 third-party suppliers named in the collaborative agreement on promoting packages for the ICL ME29 mainframe.

Product marketing director Ninian Eadie said Business-29 was "not a closed shop" and other names would be added. Talks were going on nt present with MSA.

Others whose products have been listed by ICL: Systemsolve, Package Programs, Northern Software Consultants, RTZ Computer Services, Data Sciences International, MGB Computer Services, Managemeot Enterprises, the British company AIM, and the Australian CSP.

ICL wants to add products to the retail, brewing and finance areas.

BENNETT . . . "We either had to go public or be taken over."

Parwest to farm out 'pirate proof' software

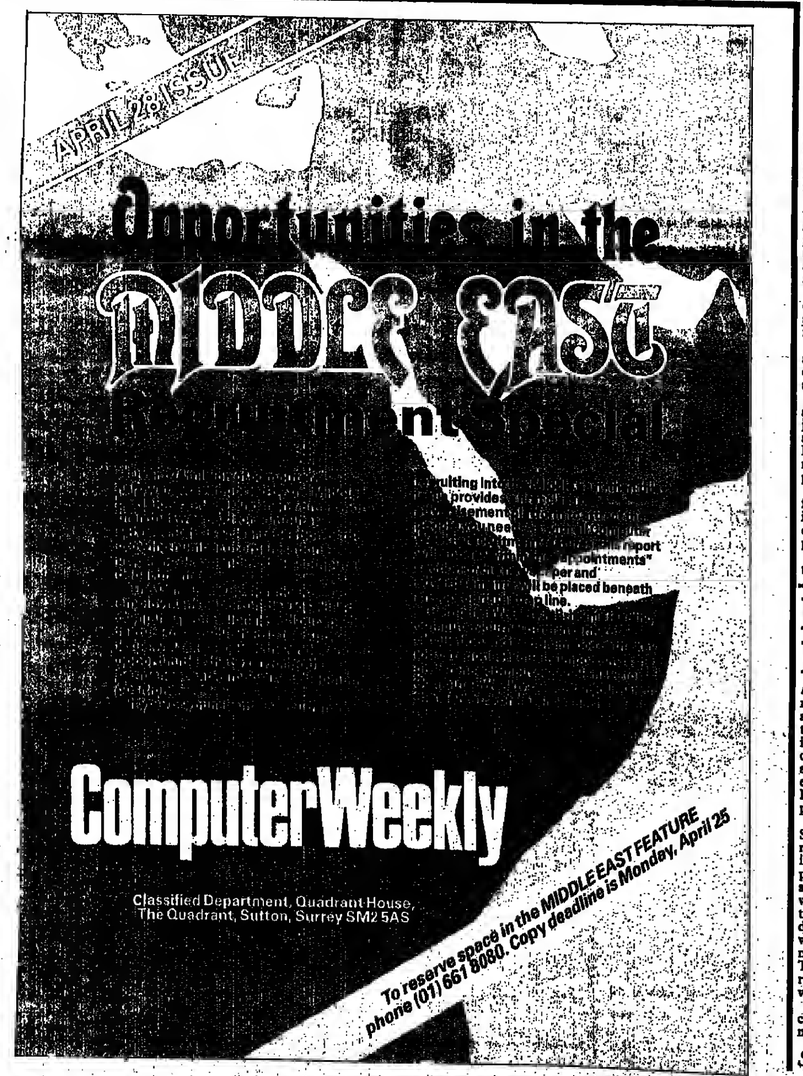
WILTSHIRE software house Parwest is to go into micro software rentals, using a new technique to ward off pirates.

The system works by forcing users to phone the supplier at random intervals to get a number which enables them to carry on.

"It's a never-ending sequence that the same number does not recur," explained managing director Keith Park. "The user gets a warning flashed on his screen and then he has maybe three days grace in which to get in touch. After that he gets locked out."

Parwest, with a £250,000 turnover mainly derived from packages for farmers based on Televideo and other multi-terminal micros, has tested its anti-pirate device for three months on several sites. Now Park is satisfied that it is foolproof and is planning to take advantage if it for short-term rentals.

"We want to train businessmen to use our products and then let them take them away to try it themselves," he said.



Microsoft gives users more power

MORE than 50 hardware manufacturers and OEMs are now being supplied with MS-DOS2, Microsoft's enhanced version of its micro operating system.

Giving details of the update last week, international accounts manager Bob O'Rear, who was responsible for the development of the original version, said: "It puts a lot more power into the hands of applications software developers."

Version 2 is seen as a step in the direction of the Xenix multi-user system, but does not yet include networking.

O'Rear added: "There's probably room for two or even three other products between MS-DOS2 and Xenix."

He would not commit himself to a timescale for completing the project, but said that a 150-strong research and development team in Bellevue, Washington, was committed to carrying it out as soon as possible.

"With MS-DOS2 some four- or five-day tasks can now be done instantly," he said, "because you don't need to write whole programs to do them."

Big steps towards Xenix compatibility have been made with the new hierarchical directory structure, the "piping" and chaining of programs and other add-on utilities. O'Rear said the net volume of the update was five or six times as much code as version one.

Microsoft customers will get the improved version free under a promise originally made by the firm when the first offering was developed out of Seattle Computer Products 86-DOS operating system.

Help facilities are included in the new version. And users can make up their own commands using the batch facility, pipes and output redirection.

Ansi cursor positioning is supported, which lets users write applications involving cursor positioning without worrying about what machine it runs on. Debugging aids have been strengthened.

A tree-structured directory replaces the single-level directory of its predecessor, along the lines of Xenix and Unix operating systems.

The improvements will affect a whole range of major micro manufacturers, including IBM, DEC, Hitachi, Wang and NEC.

Program generator for DEC minis hits UK

A PROGRAM generator for DEC minicomputers which has already achieved success in the US is about to be distributed in this country. It is RIMS/MPG, or the request-oriented information management system/mechanised program generator, and is the brainchild of Rick Roth, a former DEC staff programmer.

Roth set up Information & Systems Research with businessman Ron Morris in Pittsburgh in 1977. It began as a DEC OEM, producing commercial turnkey systems. Then Roth decided to write a program to cut down the time his team spent on coding and debugging. The result was RIMS, which was launched at the Californian Trade show Dexpo in 1981. The turnkey side of the firm was run down and now ISR is exclusively a RIMS-promoting operation.

Its progress has been limited by cautious marketing — word of mouth has been its principal channel and apart from trade shows it had never been demonstrated outside the developers' offices until recently. But ISR has built up to a $3 million a year turnover and counts among its 500 users Olivetti, Polaroid, Pear, Marwick and Mitchell, National Westminster's Centrefile, Blue Circle Cement in South Africa and leading DEC ORM Digital Systems of Florida.

The generator, which runs on hardware from the PDP 11/03 up to the Vax 11/780, is compatible with all DEC mini operating systems and their lookalikes. Its proprietors claim productivity improvements of as much as 90% and highlight the fact that it creates editable source code.

Now Roth and Morris are setting up distributorships around the world and have given the British and European rights to the newly-formed Delfont Computing of Woodham in Surrey.

Software File is compiled by George Black

UPSTAIRS DOWNSTAIRS

Whilst many companies may consider automating their offices, they seem happy to let the factory follow its old traditional methods. Upstairs—word processing, automated accounting, and computerised ledgers; downstairs—job sheets, movement dockets and stores notes.

With CMC factory data collection terminals there is now no reason why all shop-floor data should not be entered by the operatives themselves directly onto the company system. Immediate once-only direct entry of data brings many advantages. Now, every company department can work from a common database, all at the same level of update. Everything from goods in, to invoices out—taking in inventories, time and attendance, added value, works costs, ledgers, credit control, and every other aspect of management information on the way.

Series 8000 from Microdata's UK company, CMC, is a family of local area network products which achieves this in a flexible, expandable and cost effective way. Based on architecture fully proven over five years and 400 installations, Series 8000 is British designed and built and ready to serve British industry.

Use the coupon below to call for more information on how a Series 8000 system can improve efficiency by combining so many different computing functions on one network—factory data collection, word processing, electronic mail, text retrieval, communication with an existing mainframe, transaction processing and many others. Ask, too about 'mirror-imaging'—a facility which insures against system down-time to make sure that all of the Series 8000 functions are working hard for you all the time. Upstairs and downstairs.

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CMC and Microdata build understanding into computers

Masstor set to go public

ADDISON . . . Already raised "A substantiol omount of money".

THE end of this month is the go-public date for Masstor, the Sunnyvale, California-based supplier of mass date storage systems, the Securities and Exchange Commission of the US agreeing, of course.

In the UK the company has already raised what Masstor International's chief executive David Addison called "a substantial amount of money". The first public placing of the stock will be in the UK, but by the unusual manoeuvre of floating the international company as a separate entity, based in the UK, Addison must be looking to o UK public offering at some time in the near future.

Despite the potential for o UK share flotation the UK company is locked into the US parent by cross-directorships and by a right granted to the US parent to buy out the UK operation which is owned by its directors, including Addison, in 1985.

Among the investors who have backed Masstor UK is Advent Technology, which made its debut in the computer company financing field at the *Computer Weekly* financing conference two years ago. Advent was joined by a number of insurance companies and banks, all natural clienta for Masstor's device.

The device, perhsps family of devices is a better term, is based on 3.5in cartridge storage, rather than disc or tape, accessed by a robot arm under the control of a program called ACE (Actitity Control Environment). That is the point at which the system gets into very advanced data handling, and retrieval.

Each of the cartridges in the Mass Storage module can hold 174 megabytes of information, as opposed to the 50 Mb available on the same 3.5in cartridge in the IBM 3850, which is similar in design to the Masstor M860.

The arm is under the control of software in the storage control module, and Masstor says that the capacity of the tapes can be increased by a factor of 10.

An entry level M860 unit gives 55 gigabytes of storage, expandable to 440 gigabytes. The cost per megabyte stored is around $8.06 compared with $22 using IBM's 3850 system.

The read principle in the system is evolved from video technology and is based on writing the data in diagonal strips across the tapes 3.5in diagonal width. The read/write head moves relative to the tape which is unspooled and positioned by a vacuum system.

The total time needed to read a tape is about 15 seconds and transfer rate to the CPU is around four megabytes a second. The control softwsre is resident in what amounts to an independent CPU, currently supplied by MPL, a subsidiary of Fujitsu/Hitachi, or by Amdahl Corp.

bour in Sunnyvale.

The entire system, at what might be called the back end, is IBM compatible. At the front end, when the 860 has assembled the data required by the user and is ready to transfer it out to the user's own system, the Masstor device ceases to be IBM compatibity bound.

Masstor has front-ended the system with s hardware hyperchannel which can transfer data at the rate of 50 megabytes a second, to either an open network, or a non-IBM CPU and memory, such as Sperry or Honeywell.

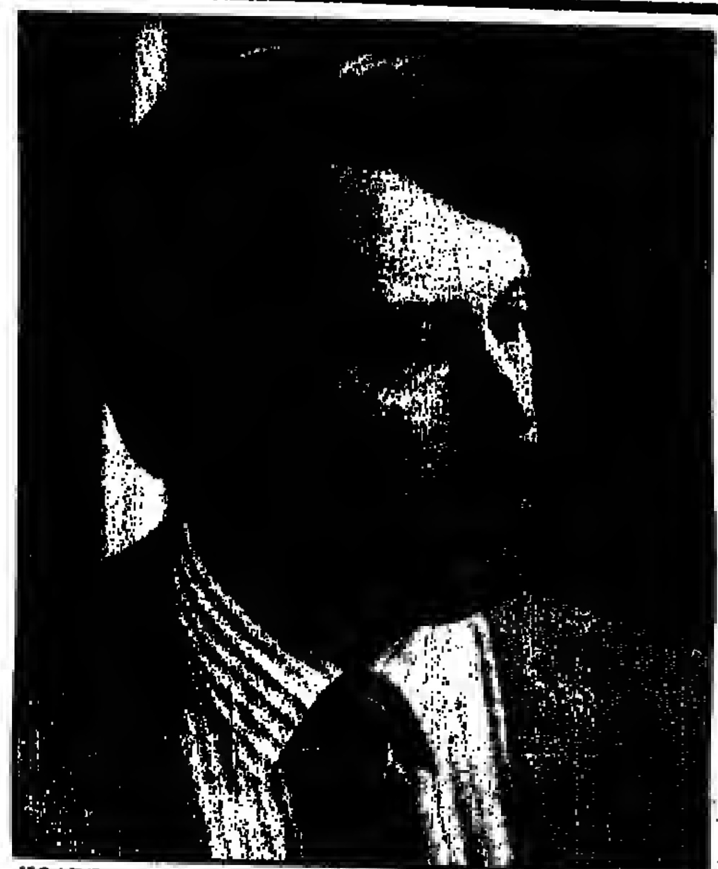
The protocol conversion is done in the Masstor software and total data transparency occurs between machines and systems such as Sperry, Honeywell and IBM.

Addison describes the company as a system supplier, which is independent of the kind of CPU used by the user.

The object, as Addison sees it, is to give the users of enormous data files an easy to use system which offloads the dsta handling on to the Masstor device.

So far the world seems to be interested in the concept and the device, which took Norwegisn engineer Eric Salbu seven years to perfect. Sales last year were $20 million and in Europe there are now three sites, two in the UK and one in Sweden.

Addison is confident that sales in Europe alone will have reached $45 million by 1985. There are a series of prospects with orders ready to place and although not identified by Addison the next three orders are likely to be from the banking and insurance sector.



HOARE . . . Profits topped his forecast by £20,000 in 1982.

Allegro gets better after tough year

AFTER a tough year, when sales — but not profits — failed to reach target, Hampshire-based Allegro is predicting £1.2 million sales for 1983, based on first quarter sales of £500,000.

Allegro, the smallest of the DEC authorised distributors, is a specialist software house offering modularised software for use on DBC's LSI and Vax series machines.

The company was set up about eight years ago by a group of ex-BCL managers and programmers and subsequently specialised in developing Dibol-based programme modules for applications on DRC machines.

According to managing director Steve Hoare, the tail end of last year saw a lot of installation order deferrals, though these had little impact on Allegro. Hoare had predicted profits of about £100,000 or 1982 and in the event topped his forecast by about £20,000.

At the moment, Hoare says, business has picked up substantially, and all the deferred business has "come rolling in".

Like a number of small software houses, Allegro discovered that the modular software concept it pioneered as an aid to its own productivity is a highly viable product in the marketplace.

Hoare says that the company already has four agents marketing the Allegro Software Kit, and he will shortly launch a campaign for more dealers. He is planning to sell the Kit via agents and appears to be offering a very attractive package to DEC licencees and dealers without in-house software expertise.

According to Hoare, the dealer gets a complete set of application modules, fully supported by Allegro, with first site demonstration at Allegro's offices, and Allegro-based backup. Third party references from Allegro's existing country-wide customer base are provided.

Allegro's track record particularly in the stability of its customer base and in its regular attained profit targets has already attracted attention in the City of London.

US gets its hands on more UK CAD

by John Kavanagh

MORE UK computer-aided design know-how has fallen into US hands. Cambridge Interactive Systems (Products) and its sister marketing company Applied Graphics Systems of the Netherlands are now officially taken over by the US CAD giant Computervision.

The takeover involves a share swap which gives Cambridge's founders 2.7% of Computervision in the form of 750,000 shares worth $30 million.

The deal follows the controversial sale of Compeda to US minicomputer manufacturer Prime and the takeover of Quest by an Arab consortium.

But Cambridge managing director Tom Sancha saw this latest takeover as a positive move for the UK.

"It's wrong to look at this as bad for the UK CAD business," he said. "This move is turning us into a multinational company. It will give us a much wider market. It's true that we will be US-owned — but now part of Computervision will be UK-owned."

Sancha said the companies complemented each other. Computervision specialised more in hardware and Cambridge dealt with software, he said. Cambridge would keep its autonomy and name but the companies would work together on product development.

Sancha said the sale was necessary because Cambridge was growing very quickly and needed backing to compete in a market where companies were merging into big groups.

"We talked to UK companies and although they were keen to back us as a UK firm they were nervous about supporting our moves into Europe and the US," Sancha said.

The Computervision takeover comes just three months after a High Court writ and the intervention of information technology minister Kenneth Baker were called on to halt the sale of Compeda a Prime.

Datastream drives financiers bananas

THE financial world seems to have gone quietly "bananas" over a company not widely known in the world of computers.

The company is Datastream, a City-based supplier of sophisticated financial services to merchant banks, stockbrokers and the like — which partly explains all the fuss. It's one of their own as well as one of ours which is going public.

And it is the manner of Datastream's going public which has caused some of the excitement.

Normally, when a company offers to sell its shares to the public the company's financial advisers fix a price for the shares, then brokers and others send in bids at the "offer" price on behalf of their clients. Datastream and merchant bank Lazards have changed the game a little by not putting a price on the 15% of Datastream which is being offered, and asking would-be purchasers to tender instead.

This shifts the onus for getting the price right to the market place itself, though Datastream gave a little help by indicating that a price of around 180p was the very least that it expected.

Most brokers advised clients to bid at 200 to 210p, placing a market value of about £24 million on the £10 million turnover company.

Datastream is currently without a direct competitor in its market, and the volume of stock on offer is small, so the final dealing price — that is the price at which the shares were dealt with after the sale was complete — was likely to be high in any event.

Neil Barton, computer industry analyst at brokers Henry Cooke Lumsden, advised his clients to bid up to 200p on the basis of a prediction that last year's profits of £1.4 million would advance to £2 million in 1983 and £2.5 million in 1984.

Barton describes Datastream as a leading company in the European electronic publishing industry, which is destined to grow by a factor of three in four years.

John Paterson, computer industry analyst at brokers Smith Keen Cutler, advised tendering 270p against almost identical forecasts to Barton's, £2 million in 1983 and £2.5 million in 1984.

Europeans have mixed luck

THERE is mixed news from three of the Continent's main computer vendors as they announce cash calls, layoffs and profit falls.

First in the firing line is chemical giant BASF, whose data processing division is a major European vendor of Hitachi's IBM compatible mainframe range.

The parent company announced that profits for last year had fallen by 21% to 101 billion Deutch marks (£288.9 million). Profits in 1980 were 40% down on the previous year. Most of the problems occured in the group's plastics and chemical division and the only comment from the computer division was that trading was "satisfactory".

Philips, a key office equipment and small computer vendor, is continuing with its layoff programme. Last year the company cut about 15,000 jobs and has announced a further 12,000 redundancies for this year.

Siemens, whose data processing division was for a long time one of the German giant's leading loss makers, is seeking cash of £63 million. The cash is to sustain operations in what the company still sees as a poor trading environment. It is a leading vendor of Fujitsu's large IBM-compatible mainframes.

SHARES TABLE

The shares table, which is specially compiled for Computer Weekly, shows selected computer companies that reflect the state of the computer industry.

Date 28/3/83 Index 131.99

Pence 1983 High	Pence 1983 Low	London Stock Exchange: Stock	Pence: Price	Pence: C'nge
406	240	ACT (App Com) (25p)	406	+15
214	176	BOC Int. (25p)	201	−2
61	41	B. Bov Kent (25p)	59	+1
161	124	Chubb (20p)	163	−2
175	128	Cole Group (25p)	128	−2
218	182	CASS (20p)	206	–
666	548	De La Rue (25p)	580	−10
323	284	Extel (25p)	305	+0
505	411	Ferranti (50p)	497	+10
217	192	GEC (5p)	204	+2
82	67	ICL (25p)	77	−1
44	41	Kalamazoo (10p)	44	+1
345	275	Kode Int (25p)	345	+5
370	270	Mamac (10p)	370	–
180	144	Muirhead (25p)	144	−4
648	458	N'market (1981) ($0.05)	640	−6
2186	967	Norsk Data	1975	−37
320	220	Office & Elect (25p)	230	−2
1128	710	Philips Lamp (Fl 10)	1066	−37
629	535	Plessey (50p)	543	+6
50	32	Quest Auto (10p)	47	−2
594	415	Racal Elect (25p)	434	+16
343	223	Rediffusion (25p)	343	+23
282	247	Star Comp (10p)	247	−8
390	275	Systems Des (10p)	380	–
497	418	Thorn-EMI (25p)	480	+10
177	136	UC&T (50p)	168	−2
		Unlisted Securities Market		
88	75	Bus Comp (10p)	80	−4
215	145	Consult (C&P) (10p)	218	+6
175	165	Int'europe Tech (20p)	175	–
247	237	Ip Tech (25p)	237	−3
54	27	J.S.D.Comp (5p)	54	+6
215	160	Memory Comp (IR10p)	166	−6
296	205	Micro Bus (10p)	290	−6
383	310	Microgen (10p)	330	–
200	135	Miles 33 (10p)	200	–
217	184	NMW (C1)	217	+7
118	81	Rolfe & Nolan (10p)	110	–
187	110	ScanData (10p)	175	–
80	70	Trident Comp (10p)	70	–
86	65	Zygal Dyn (5p)	70	–

$ 1983 High	$ 1983 Low	US Stock: Stock	$: Price	$: C'ge
43½	30¼	Amdahl	[illegible]	[illegible]
45¼	29¼	Apple Inc	[illegible]	[illegible]
38¼	34¾	Auto Data Pro	[illegible]	[illegible]
49	43¼	Burroughs	[illegible]	[illegible]
10	12½	Comp Auto	[illegible]	−1
22	17¼	Comp Sciences	20	–
12	10¾	Comshare	11	[illegible]
60	38¾	Control Data	[illegible]	[illegible]
48¼	39¼	Cray Research	[illegible]	[illegible]
50¼	41	Data General	[illegible]	[illegible]
24½	16¼	Datapoint	[illegible]	[illegible]
127¼	96½	Digital Equip	[illegible]	[illegible]
68½	47	Elec Data Sys	68	[illegible]
7½	6¼	Gen Automation	7	[illegible]
39½	19¾	Gould	37	[illegible]
61	38¼	Harris	46	[illegible]
86½	75¾	Hewlett-Packard	[illegible]	[illegible]
98½	85	Honeywell	[illegible]	[illegible]
47¼	40¼	Intel	[illegible]	[illegible]
102½	95½	IBM	[illegible]	[illegible]
62¾	54¼	Litton Ind	[illegible]	[illegible]
17¾	15¼	MDS (Mohawk D)	[illegible]	[illegible]
28	15	MSA (Mgmt Sci)	[illegible]	[illegible]
16½	12¼	Mngmnt Assist	[illegible]	–
14½	10	Modular	[illegible]	−1
114¾	94½	Motorola	[illegible]	[illegible]
33¾	26¼	National Semi	[illegible]	[illegible]
114	87½	NCR	[illegible]	[illegible]
32	27	Perkin-Elmer	27	[illegible]
44¼	37½	Prime	[illegible]	[illegible]
54	44½	Raytheon	[illegible]	[illegible]
33¾	25¼	Signal	[illegible]	[illegible]
38½	23½	Sperry Corp	[illegible]	[illegible]
24½	21	Storage Tech	[illegible]	[illegible]
29¼	24¾	Tandem	[illegible]	[illegible]
58½	50¼	Tandy	[illegible]	[illegible]
171	133¼	Texas Inst	[illegible]	[illegible]
25	18¾	Tymshare	[illegible]	[illegible]
36½	31½	Wang Lab B	13	–
13	9½	Wyly		

The table shows the closing prices on March 28, 1983. The Share Index is based on the prices of the UK companies in the table. Highs and Lows have been adjusted where necessary.

Company News is compiled by Kevin Cahill.

Pronto bids for file control

WESTERN DIGITAL, Californian communications and peripheral controller chip builder, continues its move down the board level systems path. Its latest file-management controller board, which can cope with three Winchester and four floppy drives, is now being sampled here through UK distributer Pronto Electronic Systems, with full production volumes coming at the end of the month.

The board, WD1002, carries Western Digital's most up-to-date Winchester controller chip, the WD1010, and the 279X floppy controller, plus various uncommitted logic arrays that bring the chip count down to 32 ICs — a reduction of nearly a third over the previous generation Winchester-only controller board.

"We started off as a specialised semiconductor manufacturer," says Western Digital's European vice-president Bob Sibbel, "then moved to putting our chips on to boards. We found that people wanted to buy our Winchester controller board rather than build their own — using our components and board layout even — because the cost savings they could make were too small to justify the trouble.

"So we followed our yellow brick road approach and continued to bring out more boards, with different form factors, more facilities, lower chip counts and so on in bigger volumes. This brings in more functions at lower cost."

The WD 1002 board which, because of its lower chip count, is small enough to fit in a standard 5¼-inch Winchester drive, includes error detection and correction circuitry as well as the Winchester and floppy controller devices. The two controller chips integrate functions found on several earlier chips.

Ilford-based Pronto has high hopes of the product. "This time last year you needed three double size Eurocards to do what you can with the WD 1002," says managing director Tony Diamond. He claims to have many major orders already, and that Pronto, through Western Digital, will "own the file management business in the UK by the end of 1983".

File management is very much Western Digital's mainstream business at the moment, adds Sibbel. Companies such as Hewlett-Packard, Olivetti, Tandy and NCR all design Western Digital chips on boards into their strategic products, claims Sibbel. "CPUs are not really our business," he says, "but we are everywhere else in microcomputer boxes."

But Western Digital is moving steadily towards communications and networks. It already produces X25 protocol controllers, and is actively backing the token-passing type of local area network.

SIBBEL . . . "Not CPUs, but everywhere else in microcomputer boxes.'

HALL . . . "You don't have to scratch around for business."

Heseltine rises from ashes with a Torch

A MICRO hardware and software supplier, Heseltine Business Systems, has risen from the embers of the Barking-based Heseltine Group's IBM bureau. It closed down the bureau at the end of February, and has now re-opened as a Torch supplier and micro software writer.

"We were effectively a facilities management team for shipping agency Brown Jenkinson," says Heseltine sales director Bill Hall, "doing its data processing internally and working outside the company as a computer bureau.

"The company decided to gather in its assets and concentrate on solely the shipping business, dumping the external bureau work."

Heseltine had always been a systems house, adds Hall, running a couple of DEC houses as well as the IBM mainframe, and after the demise of the bureau felt it had to get into the growth area of microcomputers.

It still does work for and maintains the DEC sites.

"We are looking to become specialist in particular fields," says Hall, "with software scaled down from work we have already done. The general standard of micro software is not particularly high, with some absolute rubbish around." He believes that Heseltine's mainframe experience will help with the software writing.

The hardware it has picked on is from Torch, of which Hall thinks highly.

"It's a new game," he adds. "With the Torch, orders just flood in. People come and knock on your door — you don't have to scratch around to get business as you did in the bureau trade."

Copyright tussle with Japan

COPYRIGHT and patent infringements, a long term bugbear of US personal computer manufacturers, are again surfacing in the microprocessor chip arena. US-based semiconductor companies Intel and Zilog are both tussling with Japanese company NEC, while Intel is also taking on Mitsubishi.

The heart of the disputes lies in reverse engineering, producing copies of chips using information obtained by stripping off successive layers of chips from the original manufacturers, rather than through database tapes and masks given to official second sources.

Intel's chips in question are the 8088 and 8086 microprocessors, second-sourced officially in Japan by Fujitsu and unofficially, through reverse engineering, by NEC and Mitsubishi. Intel has reached agreement with NEC settling copyright claims that might arise from NEC marketing its unlicensed copies of the Intel designs in the US, and is negotiating with Mitsubishi to avoid any legal confrontations over US sales of Mitsubishi's 8086.

Both the Intel claims over chip copyrights seem likely to be settled without going to court.

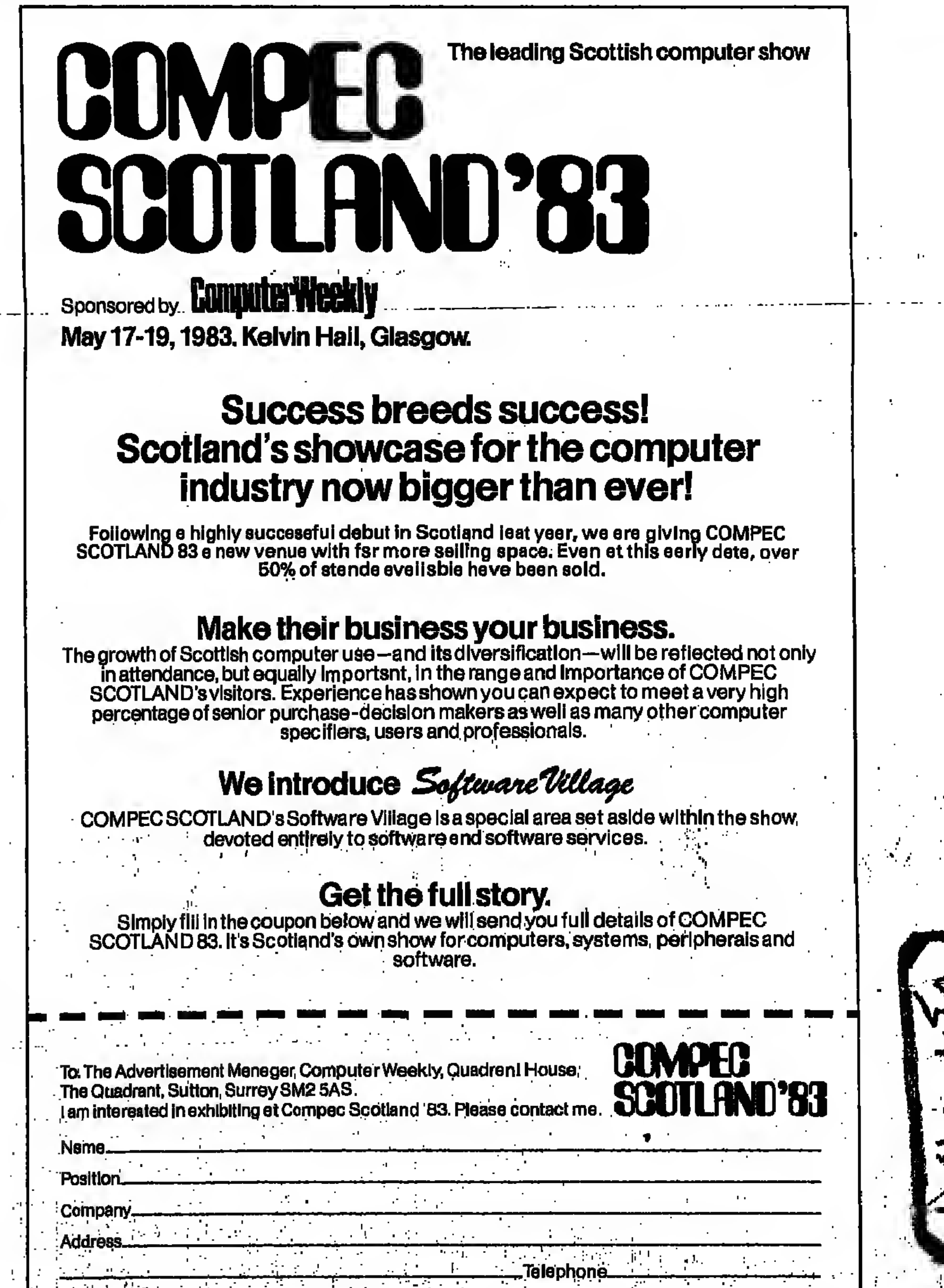
Intel forgoes its memories

BUDDING systems company Intel, intent on getting away from its purely chip-making image, has sloughed off its Series 90 add-in memory systems and certain custom memory systems to California-based Zitel, giving Zitel design information, manufacturing tooling, test equipment and product inventory in exchange for an undisclosed cash payment, a holding in the company and four years of royalties.

The stock holding will be less than 10%, but Intel will have a seat on the Zitel board, to be filled by William Regitz, general manager of the OEM communications operation at Intel. This is the renamed memory systems operation.

The renamed operation within Intel is now more concerned with speech transaction and data communications products.

Micro News is compiled by Robert Parry.



PROFILE

Hale and hearty – but unspoilt by success

"I AM deliberately conservative," says John Hale. "I don't really want my company to do more than double its income each year."

This would not be everybody's idea of caution, but he goes on to explain his philosophy of business: "If we did I am not sure we would be able to control the situation. Market share at any cost is not our road."

Some companies in this industry, he hints, are trying to grow up too fast and could come a cropper as a result. And he doesn't want his to be among them.

"If you sell a million items at a penny profit on each it's still only a million pence, isn't it? If you aren't making a decent profit on the way then you aren't going to be able to give your customers the support they need. And that is the beginning of a lot of trouble."

Hale became interested in computers as a user of Ferranti's Mercury while on a maths degree course at Manchester University. He turned down an offer to join IBM as an engineer because he felt it was not right for him.

He wanted to get involved in the commercial world, so he went instead to International Computers and Tabulators, ICT – the creation of a merger (he struggled to get his history straight) between Powers-Samas and the British Tabulating Machine Company. He was technical adviser on the ICT 1900, predecessor to the ICL 1900 which was born with the merger of ICT, English Electric and Ferranti in the mid-Sixties.

"I was sold along with the second 1904 to be produced, to the British Motor Corporation at Longbridge and spent two years there looking after the machine."

Then he was dispatched with an ICL 1902 to Singapore, where he stayed three years.

Hale left ICL in 1969 because he wanted to learn more about IBM and about the user side of the industry.

He was employed in Switzerland by Investors Overseas Services (IOS) before the crash, in which Bernie Cornfeld, the company's boss, was sent to jail for fraud offences.

"We could see that the balloon was about to burst and the entire data processing team of about 80 people left as quickly as possible. Most got jobs elsewhere in Switzerland, as I did with Nestlé."

When he returned to Britain, he went to work for Cincom, where he became UK general manager.

In this period his interest was shifting gradually towards the management and support of software products. It was this which decided him, in 1978, to join Management Science America, following in the footsteps of Michael Hunt, who had also migrated from Cincom. He was managing director of MSA's UK subsidiary, but got "a bee in his bonnet" about wanting to run his own company.

HALE . . . "We really don't want more than 100% growth a year."

So he went off to start Hale Computer Services, convinced there was a gap in the market for Honeywell Level 6 applications software.

"And I turned out to be right. The company still trades in that area. But having got the bee out of my bonnet I decided to sell off the firm.

"Wherever you work you have a boss, even if it's only your bank manager. What I learned was that you have to work with other people and you should make sure they are good, because successful co-operation is the key."

MSA had just bought Peachtree, in the summer of 1981, and was looking for a manager for its prospective British subsidiary, which became Peachtree International.

"I had worked for them before and knew the whole situation well, so it was an obvious move for me to come back. Anyway, I realised that micros were going to be the future and if MSA was going that way I wanted to go with them."

Revenue in the first year was $2.9 million, the aim for 1983 is therefore $6 million. Both MSA and Peachtree are busy setting up agents all round the world in parallel.

"That's going to keep us fully occupied for a while. So we really don't want to have more than 100% growth per year."

PLATFORM

Control Data's City Venture Corp, which uses the Plato computer aided education system, has been attacked by the Newham Employment Consortium for its plans for Canning Town (see page 20). CDC's Herb Trader defends CDC's role . . .

How computer-based education can revitalise decaying inner cities

No major city has been untouched by the disease of inner city decay. Millions of functionally illiterate young people are leaving the schools. Unemployment has risen dramatically, especially among disadvantaged youths. Crime has reached frightening proportions – has invaded more affluent neighbourhoods. Government alone has been unable to cope with either the problems or their consequences. For millions, quite rapidly, the future is being foreclosed.

Few would disagree that the root cause of inner city decay are lack of jobs and lack of appropriate education and training opportunities for residents.

Nor would many disagree about the best model for inner city revitalisation. Businesses must be started by community residents – with employees drawn from the neighbourhood.

But to reach that point requires a vast improvement in the quality, quantity and affordability of education and training.

Successful neighbourhood revitalisation cannot occur without upgrading the quality of the present and future workforce, and without enhancing the skills of the local entrepreneurs.

That's where computer-based education and training plays a major role – and the Control Data Plato system has been demonstrated in the toughest environments, including dozens of inner cities, prisons and programs for the handicapped.

But computer-based education is ultimately only as effective as the materials being delivered. There are no short-cuts in courseware development. Even the smallest concession to quality diminishes the learning experience. At Control Data, the process from blank paper to finished, field-tested, high quality courses takes anywhere from 18 to 24 months.

How effective has the Plato system proved to be? The results have been indisputable. For example, Control Data's Fair Break programme prepares disadvantaged people for jobs by training them in basic and vocational skills. More than 10,000 students have enrolled in more than 250 locations across the US since the programme began in 1978.

In San Antonio, Texas, 473 high school dropouts enrolled in the programme during its first year. Of these 378 completed training and 95.5 of those who took the tests passed their high school exams.

In Atlanta, Georgia, of 711 students who were enrolled during the first two years, 645 completed the training successfully and skill levels are now increasing by an average of 2.5 grade levels in reading and 1.9 grade levels in maths for every 40 hours of Plato instruction.

In St Paul, Minnesota, 94 of the 138 students who started a work readiness programme obtained subsidised employment with an average starting pay of £4.13 per hour, and 25 others went on to further education and training.

In Los Angeles, vocational training provided by Control Data enabled 58 of 60 disadvantaged participants to obtain jobs as entry-level computer technicians in 33 Los Angeles area companies at salaries ranging from $11,336 to $15,600 a year.

In addition to questions about its effectiveness, those who doubt the value of computer-based education often express fears that computers will dehumanise the teaching process or teachers will lose their jobs.

Any sceptics who doubt the human element computers can bring to the learning process should spend a few minutes watching a young child encounter a Plato terminal for the first time – or meet the junior high students at one US school who broke into the building in the middle of the night to get more time on the terminals!

Nor are terminals meant to be used for six or seven hours a day – they should never eliminate the warm human relationships between students and teachers. The computer cannot replace any single teacher completely, but it can replace some of the more mundane, repetitive functions every teacher performs.

Too much time is wasted attending to chores which detract from student contact. Computers can do them better – so why not let them?

The role of the teacher is more critical in the computer-based environment than it has ever been, *but teachers' roles will change.* Fewer teachers may be directly involved in the delivery of learning, but many, many more can become involved in the creation of new materials and courses.

Computer-based education is a proven tool that can stem the tide of functional illiteracy pouring out of the schools. It can provide the basic skills and vocational training needed by the present and future workers employed by local businesses. And it can provide education for the entrepreneurs themselves.

Taken together, those capabilities make computer-based education a powerful tool for the revitalisation of inner city communities.

Herb Trader

DOWNTIME

Alarming sounds mar the environs

ALL things digital are not always beautiful. Look at all the watchmakers, magnificent craftsmen some of them, who have been put out of business by digital watches which, make no mistake, are not pleasing to the eye and fail to make clear the universal link between time, space and movement.

Digital watches are also guilty of polluting our acoustic environment, as conference delegates know only too well. Hardly a second goes by that does not give us the irritating ear-tickling sound of the alarms from these digital monstrosities.

What are these alarms for, one may ask with some idle justification. For many in this pill-swallowing, hypochondriac age, the purpose is no doubt to remind that some vital medication should be taken.

But most of them, we suspect, are obscure Masonic codes that enable delegates to communicate without risk of being overheard by perfidious colleagues, invidious journalists or pernicious rivals.

But we have reason to believe that a few are tied to the biorhythms, and sound an alarm whenever a change is imminent as determined by the calculator in the watch.

So what's in a name?

WHILE one must applaud ICL's return to *naming* its machines, rather than calling them something akin to a 2999/478 model 5b/vms(4), one must also question the method used of deriving such names as Atlas and Estrel.

Atlas, of course, derives from the expression of at least one top ICL man when he learned of the decision to market the large Fujitsu mainframes: "ATLAST, we've got a machine powerful enough to run VME/B!"

Estrel, on the other hand, conjures up mystical visions of Arthurian legend, complete with wizards and damsels in flowing cloaks moving gracefully through misty woods.

But Estrel's roots are far more prosaic. As a development project, the machine was dubbed the S3. An "L" suffix was added to denote the use of LSI chips in its construction. When the inscrutable Orientals from Fujitsu attempted to get their tongues around the mnemonic, what came out was: "Ab so, ess-tree-ell"

And ICL's venerable 1900-based online system, Pericles, which bandies, among other things, the number of CAFS systems sold is a prime example of deciding on a punchy name for a product and worrying about what it stands for afterwards.

Sources close to the ICL division responsible for the system tell me that the name PERsonalised ICL Enquiry System was chosen because it was the only other word they could think of which had *ICL* in the middle.

Users who hide behind closed doors

WHILE computer companies wanting to keep journalists in the dark are nothing new, I must admit my interest was engaged when I discovered that the ICL user group, once glad of the occasional mention in these and other less hallowed pages, had unilaterally decided to ban hacks from its forthcoming conference.

"We were a bit embarrassed last year when journalists weren't allowed into Robb Wilmot's presentation."

While it's nice to know that ICL CUA wishes to save us delicate and sensitive reporters from being left alone in the bar while Robbo delivers a top-secret dissertation on highly delicate matters, it does seem a shame to lose one of our few chances to meet large numbers of real computer users.

Still, I suppose I could always grow my hair, stop shaving and go as a systems programmer.

Chad

Liveware File

by Don

10 YEARS AGO

FROM COMPUTER WEEKLY OF APRIL 5, 1973: Datafair 73, due to be held at Nottingham University from April 10 to 12, would encompass exhibits from over 50 organisations and nearly 100 symposium papers . . . A new robot, Record Organisation Robot Transposition, from Software Sciences, was released on to the market for ICL 1900 machines . . . After 18 months of marketing through Exchange Telegraph, key-to-disc manufacturer Inforex decided to form its own subsidiary, Inforex Ltd, to market and service all Inforex products . . . Total value of computer facilities installed in government offices and other public service departments in Scotland was about £16 million, the Commons was told . . .

ComputerWeekly

Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS

Thursday, April 7, 1983

The government needs advising

IT is nice to be loved and it is even nice to be wanted. Whatever else the cheering and flag waving of IT82 did for the computer industry it has certainly brought it to the attention of the politicians.

The major parties have all officially recognised what industry leaders have been saying for a long time: information technology will be one of the most important industries for the rest of the century and it needs investment now. It would seem that the only questions on which the politicians now vary is on how much money the industry should have and where it should come from.

This is properly the realm of politics and it should be left to the country to decide.

It should be a cause for rejoicing that the country's political leaders have recognised the importance of our industry. But it is no cause for complacency. However much money the government does put into the industry much will depend on the people administering it and Whitehall does not have an unblemished record of picking or administering winners in areas which it does not fully understand.

Computers and how to sell them is one of these. The dust from the failure of Insac, the plan to sell British software to the Americans, has yet to settle. The final bill for this scheme left little change from £20 million.

And there are few kind words for Insac in any of the five major UK software houses that were initially interested in the scheme. The most charitable comment from them has been that Insac 'only' wasted management time and not much cash.

Inmos, the government backed scheme to get into the high stakes game of microprocessor design and production, has yet to fulfil its promise. Aregon, the marketer of UK videotex expertise, is in a similar state.

It is clear that the government will need all the good advice that it can get. As we have pointed out before, the industry is of age, and it is time that its leaders make at least some of their expertise and time available to the country. There should be more involvement in public affairs on the part of the men and women who have experience of the computer industry.

Poor old Telecom

IT IS difficult not to feel sorry for British Telecom. The UK does not have the telecommunications that it deserves and needs. But the fault cannot be laid totally to British Telecom.

It has long been starved of cash for investment by successive governments and is an object lesson in the problems which can beset an industry and service which is part of the public sector. Two of these have been highlighted in the past week.

British Telecom finds itself assailed by its largest and most powerful union, POEU (Post Office Engineering Union) for two of the government's policies. One is the setting up of its rival, Mercury, and the other is the plans to move Telecom itself into the private sector.

At the moment the industrial action is aimed only at the City of London and its financial centres and at the government departments in Whitehall, but the union is firm that it has plans to extend the action.

More galling to the Telecom management must be the financial strictures under which it operates as a public body. These were brought into focus last week when the Treasury released the details of the money clawed back from the European Community. £200 million of this was earmarked for the improvement of the UK's telecommunications system. But this does not mean that Telecom or its users will see the benefits, for it goes into Treasury coffers.

It has long been the complaint of the UK's town halls and local governments that some EEC money earmarked for various types of areas is, in effect, appropriated by the Treasury.

Telecom now finds itself limited by the same iniquitous seeming system.

1984 and all that . . .

THIS week's example of the strange things people say about computers was sent in by Owen Roberts of Andover, Hampshire, who wins £5.

The IT revolution was made possible when man made the first transistor, but it really got going when it was realised that millions of miniature transistors could be etched onto a single piece of silicon, and now plastic.

Home & Country

LETTERS

Hitting it on the head

YOUR recent news item about the National Union of Mineworkers studying the likely job losses arising from automation brought back fond memories of a little story in *Computer Weekly* years ago.

It concerned a system which Data General had sold to some mines in the US. This example of computers acting in the service of mankind involved the installation of a mini down to a mine controlling sensors attached to the roof.

The idea was that this marvellous system would detect new pressure on the roof and warn the miners that it could be about to cave in.

But this turned out to be a great example of expensive over-selling. Your diligent reporter had actually telephoned the National Coal Board to see if the system could catch on among our brothers in the National Union of Mineworkers.

"Well," was the frank reply from the National Coal Board man, "I don't think we need this system. Our blokes usually test if the roof's about to cave in by hitting it with a hammer."

JOHN KINGSTON

Colchester
Essex.

Back best innovators

YOUR editorial (CW, March 24) rightly draws attention to the need for an adequate UK information technology policy. Surely, one of its most important elements should be to seek out our best innovators and provide them with adequate backing? Yet this element is at present almost totally lacking, so that only some of our most able inventors and entrepreneurs actually succeed.

Despite the wide variety of sources of finance for computer software and information technology, both from public bodies and from industry, and despite the extensive funds already at their disposal, there is a very serious gap in their coverage. Money for new enterprises is provided only to companies and projects that have already formed management teams of high quality, even though the development of such teams can be very costly.

Support for research and development is usually granted under rather restrictive conditions, with severely limited terms of reference. The supply of new university posts for people of high ability is now a mere trickle.

All this means that an outstanding and versatile innovator, whether a researcher or an inventor, an originator of important software or a designer of a new information system, is all too liable to fall between these three stools. This will almost certainly be the case if he has little skill in business and administration, even though his products meet genuine market needs.

It is tragic that my friend Gordon Hyde, a multi-disciplinary genius who could perhaps have given Britain the lead in fifth generation computers, died just over a year ago in near-poverty, still waiting for support.

What is urgently needed is substantial seed money for these brilliant individuals, perhaps between £20,000 and £100,000 a year, according to their ability and past achievements. These innovators of genius, once found, should be given the freedom and the resources to "get on with the job".

If British public authorities and private financiers do not adopt this policy very soon, then the UK is in grave danger of losing to its Japanese, American and French competitors in the race for microcomputing, fifth generation computers and information technology.

ALAN J. MAYNE
Proprietor

Blue Apples Computing
London N10 2EH.

'Independent' advice

REGARDING the letter on the SSP survey commissioned by IMS which failed to materialise due to "disagreements," we made arrangements for IMS to visit a client's site in order to have hands-on experience of our system but they failed to arrive.

It is unfortunate in our industry that consultants and professionals are able to sell their own product while offering "independent" advice.

Consultants or prospects are welcome to review our proven systems at length but please – no more from IMS.

JOHN REES

Target Computer Group
Cardiff.

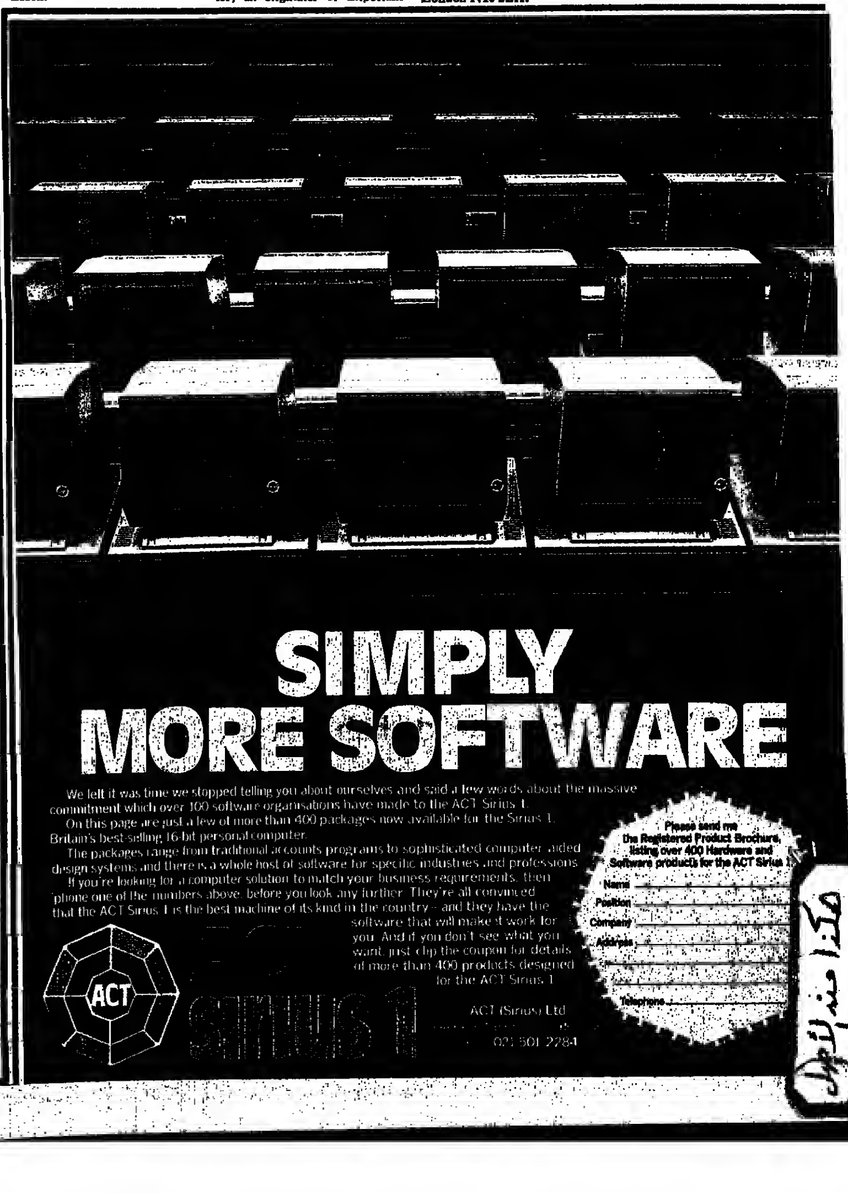
Micros for schools

I WRITE to correct a piece which appeared in Computer Weekly recently concerning Control Data offering micros for use in schools.

To avoid confusion I would like to make it clear that this is an initiative being taken only by Control Data Corporation in the US.

PADDY CARLIN

Control Data
London WC2.



Vic blows the whistle on the contract market

GROVES . . . Result never justifies the means.

VIC GROVES, whose initials founded VNG Professional Services which dominates the contract programming market in the North, has at least two passions in life: soccer and his company. In both he professes a dogged belief in fair play.

"The result never justifies the means," he tells me. "I believe this holds in football and in business."

Continuing the football analogy, Groves lays into the National Computing Contract Directory, published by Willoway as an alternative source of contract labour to the agencies. Willoway has spent too much money signing players, Groves believes. Not enough people will turn up to watch the team.

By which he meana that not enough companies will subscribe to repay the huge initial outlay on advertising to attract contractors.

The fact ia, however, that the directory company has so far enticed 3,000 contractors on to its books, and a trickle of coolpanies is coming in at a £380 subscription. Whether that trickle will swell into a sufficient cash flow remains to be seen.

If VNG wanted to issue a directory, it could do so tomorrow, Groves assurea me. He aays VNG has just as many contractors on ita books as there are in the directory.

Other agencies also come in for savagery. They charge too much, Groves contends, and are not flexible enough in their charging strategy.

VNG takes an average 17% of the fee it charges ita clieots, paying the reat to the contractor. This certainly places them below the industry average of 25%.

So how do they do it? By running on a shoeatring and keeping costs to the bone, claims Grovea. VNG has about 10 staff aod about 130 people out oo contract, more than 70 of whom are in the North.

VNG differs from most of the large ageocies io that more than half of its contractors work for three or four companies with which VNG has a big account. Twenty work for ICI, which has nominated VNG as one of just three preferred suppliers.

VNG charges lower than normal fees to these preferred suppliers by cutting its take to just 10%. It paya for overheads, saya Groves, and is a good way of netting business.

Aothony Lambie, marketing manager of the VLI group, the UK's biggest agency, agrees that most agencies do not operate as preferred auppliera for big companies. VLI does not cut its rates for bulk supplies of contractors, he says, because it coats nearly as much per head to aupply them.

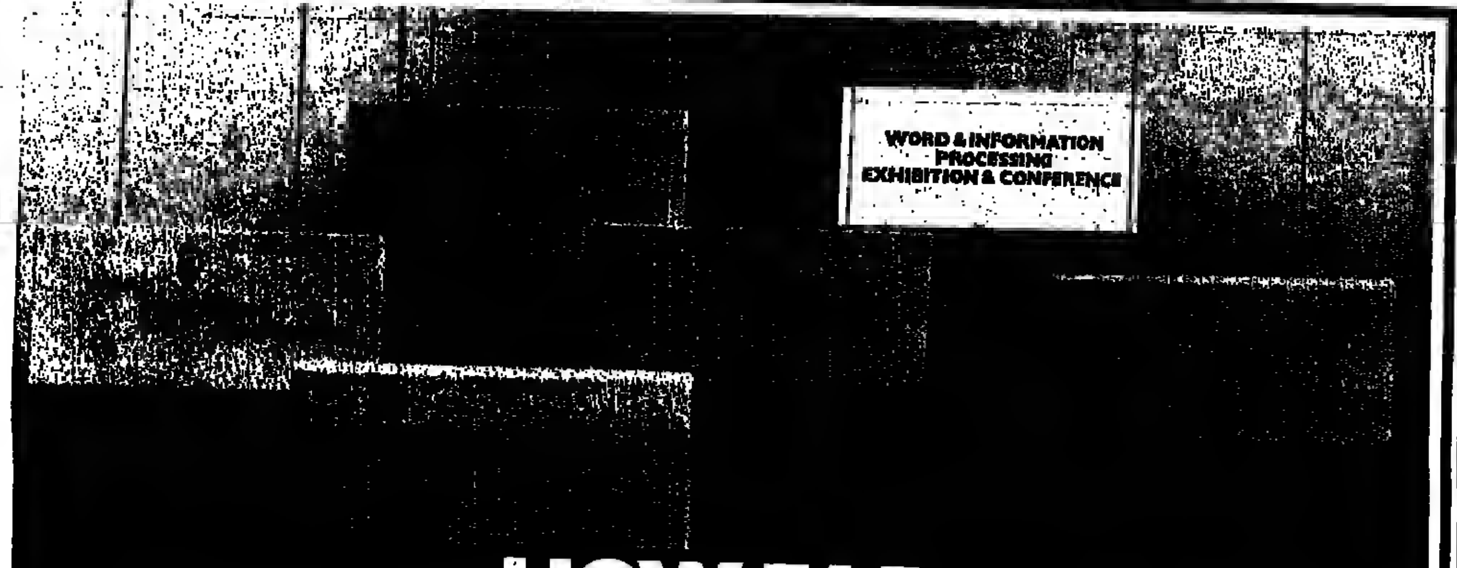
The only advantage in offering discounts to companiea which hire contractors in bulk is as a marketing exercise, Lambie believes.

VLI knew that ICI was looking for preferred suppliers a couple of years ago and decided not to tender for the cootract. "We didn't bid because we couldn't in our heart of hearts believe we could guarantee the quality," he admita.

So the question is at once: What does ICI think of the people supplied by VNG? "We have been satisfied with the way it has worked," confirms ICI central management aervices manager Bernard Buckroyd. VNG has supplied about 80% of ICI's contractors over the last two years, he adda. And other companies would do well to look for preferred suppliers of cootract programmers.

Aod what do the contractors think of VNG? One of them, Ed Gleghorn, haa been on contract at Shell Chemicals in Carrington under VNG's unbrella for nearly two years. He is cooteot with VNG's pay, which averages £380 a week in returo for which he is developiog an IBM-CICS online syatem.

So it looka like thumbs up.



HOW FAR DO YOU WANT TO GO?

It started with word-processing. It's turned into the information-processing revolution.

And as with all revolutions, nobody can foresee all the outcomes.

But if the future's on show anywhere, it's on show this May at the International Word and Information Processing Exhibition and Conference.

A glance at the Conference programme alongside tells you that *this* conference is addressing the opportunities and problems of information-processing head-on, in addition to 12 half-day seminars, a full day conference, staged in association with the National Computing Centre, will explore the potential of Teletex.

And the list of exhibitors guarantees that the state of the art will be open to inspection and discussion.

It's the largest dedicated event of its kind in Europe. And though it's entirely accessible to beginners and business buyers, it's also this year's most comprehensive forum of systems designers and developers.

Choose from these conference subjects...

Word processor selection in 1983
Microcomputer or dedicated word processor - how to decide
Word processor communications
From word processor to quality print
Selection and training of word processing personnel
Changes in the secretarial rola
Management strategies for the electronic office
Cost justifying improved manager and professional support systems
Word processing and data processing - forging the links.
In-house networks for office automstion
Multi-function workstations
Integrating image and voice technologies

See these systems in action.

Exhibitors as at 1.3.83

ADC · Advent Data Products · AES Data (UK) · Amida Systems · Apple Computer (UK) · B.E.D. Business Journals · British Telecom · Business Data Capture · Business Systems & Equipment · The Carter-Parratt Group · Compucorp · Computer Ancillaries · CPT (UK) · Data Logic : Data Recall · Data Transfer Systems · Dictaphone Co · Digital Equipment Co · DP Computing · Exxon Office Systems (UK) · General Audio & Data Communications · Grundig International · IBM United Kingdom · The Information & Word Processing Association · Inlosec · Intec Systems · International Computers · ISA · Jaecrow Systems Services · Lanier Business Products · Logica VTS · Manpower : N.B.I. · Office & Electronic Machines · Office Equipment Index · Office International · Pagereed · Philips Business Systems · Q-1 Europe · Racal Information Systems · Silver Reed (UK) · Sony (UK) · S.P.T. Electronics · S.S.C.S. · C.T. Wade & Son · Wang (UK) · Which Word Processor & Office Systems · Wordnet UK · Wordplex · Word People · Wordskil Automation ·

Design your time at Wembley to get the most out of it.

Use the coupon for as many tickets to the exhibition as you need. And get full details of this year's advanced conference programme. Exhibition and conference combine to produce the sharpest, most authoritative event of its kind in 1983.

Don't miss it!

To BETA Exhibitions Ltd,
8 Southampton Place, London, WC1A 2EB
1983 International Word & Information Processing Exhibition & Conference.
Please send me ______ (qty) compilmentary exhibition admission tickets.
☐ (tick) the full conference programme.
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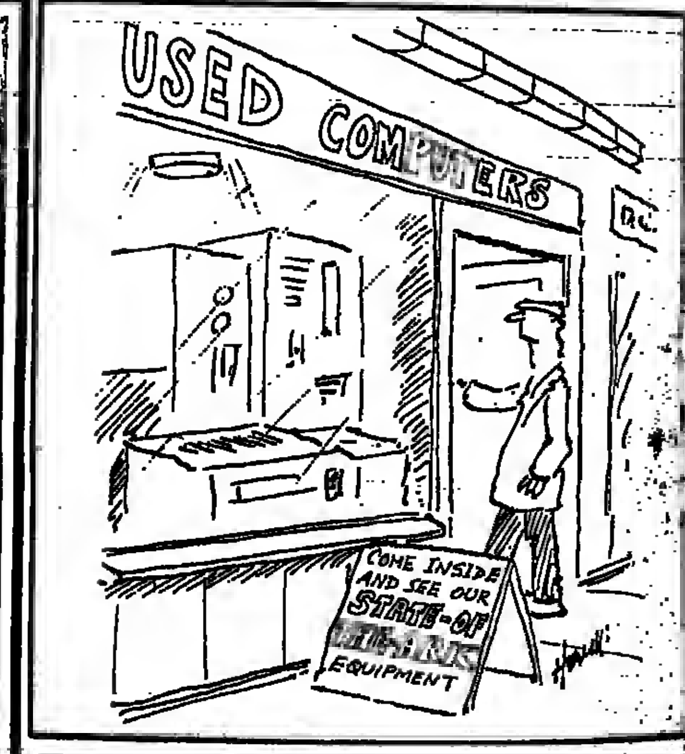


For sale – 500 skilled workers

THE ugly words "rationalisation of production" sent a shiver down the spine of 500 production staff at the photosetting factory of Linotype Paul in Cheltenham. In response to a world printing recession and a move to smaller machines, Lintotype decided to cut down from two factories to one. And I need hardly add which of the factories in the UK and West Germany the company chose to close.

But the 500 Linotype people may yet find their feet together on a factory floor. The Inbucon consultancy, which owns Leasco Software, has got together with Linotype in an attempt to sell the 500-strong workforce as one unit.

"There must be somebody in the advanced IT induatry who can make use of this lot," hopefully declares Inbucon product director Dennis Henry, who is also in charge of Inbucon interest in Scotland. Henry says he has never taken on a DP force, but claims other bulk successes in Scotland.

A windscreen factory recently took on double the oumber of people that Henry had been asked to find work for.

Inbucon has just spent four weeks preparing to sell the collective skills of the Linotype 500. A full colour 16-page brochure has been printed giving glossy references. These will be sent to 1,000 likely employers worldwide. Henry says advertisements will be placed in the *Financial Times*, all world editions of the *Wall Street Journal*, and the Japanese counterpart of these papers.

"As a labour force, it has a balanced range of akills," says Henry, in explaining why the people are being sold as a unit and not being broken up according to age, experience or qualificatioo.

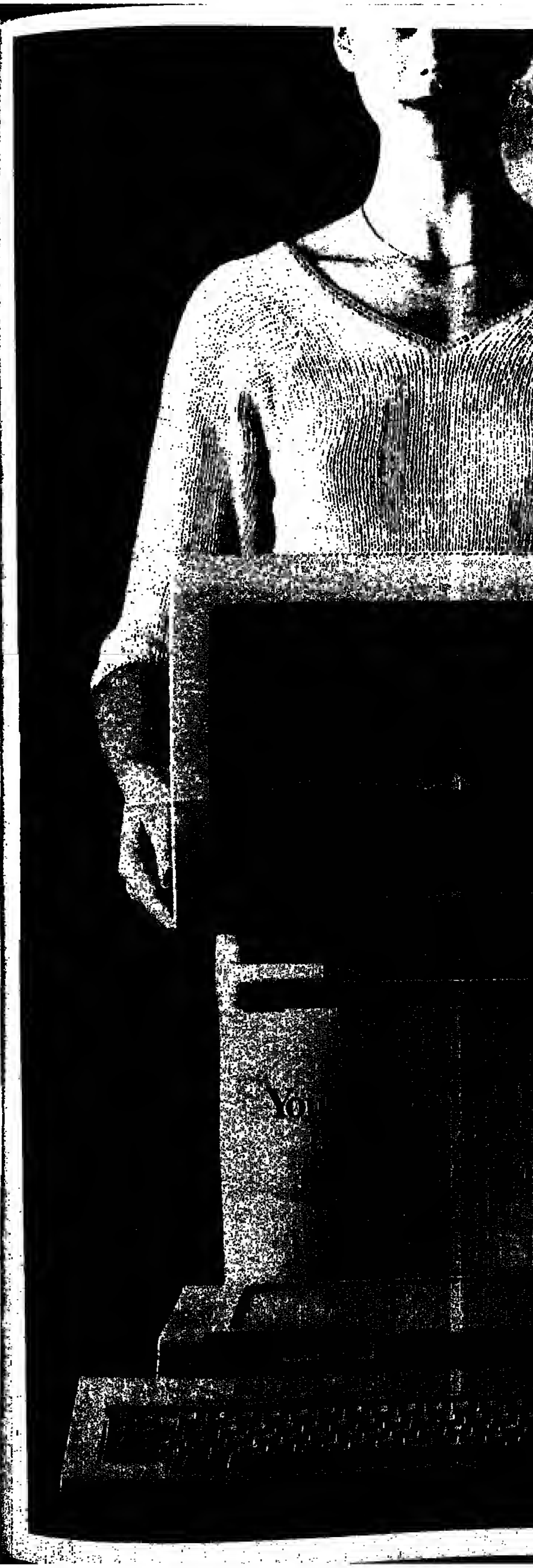
Workplace is compiled by Philip Hunter.

PUZZLER

THIS week's rather chauvinlatic alphametic will be difficult to solve without accesa to a computer, but it's so neat I can't resist showing you.

$$\frac{EVE}{DID} = .TALKTALKTALK \text{ (recurring)}$$

Clue: The letter I is indeed the digit "1". See page 47 for solution.



If excellent ergonomic work station design is as important as low cost, then the new IBM 3178 Monochrome Display will suit you admirably.

It comes in lightweight units making it easy to move from desk to desk. What's more you can set it up yourself even if you're not technically minded.

Your users will appreciate the pedestal-mounted display providing tilt and rotate, the fine etched surface to reduce light reflection and fingerprint smudges, and the new slim-line keyboard with adjustable inclination for operator comfort.

Buy one IBM 3178 Model C1 and it will cost you £1,135* but you'll probably want to take advantage of our new range of volume purchase discounts, whatever the size of your company.

For example, buy ten and the price becomes £1,067* each. Buy fifty and the price is under £1,000.* Buy over 500 and they're only £908* each.

Funding could also be available through the IBM Financial Lease Offering.

You can also use the IBM 3178 for text and data with our new Entry Assist Microcode (at no additional charge) when attached to most IBM Controllers.

Our new 3274 models give you power and a lot more for the same models they are replacing, and possibly save you coaxial cable costs with our new network IBM 3299 Terminal

[illegible] coupon or attach [illegible] and we will send you more

[illegible] account representative for a [illegible]

IBM

Peripheral trade gap turns into a £270m gulf

An increasing deficit that reached a peak in 1982 is analysed by John Aczel

THE trade deficit for the UK computer peripheral sectnr has been increasing and reached a high level during 1982. This was due tn considerably higher imports nf peripheral equipment, as fnreign deliveries have been increasing their penetration of the British market in recent months.

As a result, inports exceeded exports by over £270 million in 1982, and in volume the gap widened to over 630,000 units.

In the closing months of last year, the average deficit continued high, amounting tn £18 millinn in December.

The level nf imports has remained at s high level and was £62 million during Decenber, though this was slightly less than that reported three months earlier. For 1982 as a whole, total imports of peripherals reached a record of £705 million.

The growth in volume has been even more significant, with 88,000 units imported in December, against 86,000 in September, while the cumulative figure for 1982 reached over a million units.

It had been expected that imports would slow down during the latter part of 1982 as a result of the recent fall in sterling against the dollar and other foreign currencies. In fact this has not happened, as most importers of peripheral products have been very competitively priced. Thus, the average price per imported unit dropped to about £700 in December as against over £750 in September.

Foreign deliveries have been dominated by US suppliers, and their value continued at a bigh level, totalling £36 million in December. They accounted for nearly 60% of overall British imports during that nontb while, for the year as a whole, total deliveries from the US reacbed a peak of over £410 million.

Other countries have also increased their level of deliveries, particularly some of the Continental suppliers. For instance, imports from West Germany reached £4.6 million whereas, earlier in tbe year, it had been averaging about £4 million a month.

Higher deliveries from Ireland have also been reported, reaching nver £2 million by the end nf 1982, while imports from the Netherlands have been showing a marked rise in value.

In the case nf Japan, deliveries of peripheral equipment were also on a rising trend and reached a new peak nf nearly £4 million in December. At the moment, Japanesc inpnrts still represented about 6% of total British imports, but this proportion is likely tn rise significantly over the next 12 months.

The latest trade figures reveal that most types nf peripheral units have been in demand, and that bigher imports have been experienced for a variety of kinds of products.

The main increases, however, have occurred in the case of disc storage units, with their volume rising to over 18,000 units in December, while imported printers were in great demand, showing a growth of 5% to 22,000 units in that month.

The increase in imports of visual display units has also been significant and they reached nearly 20,000 units in December — a record figure for that period.

Exports have been fluctuating, but, at the end of 1982, they showed a better trend. They rose to £44 million at the end of 1982 as against £40 million in September while, for the full year, the cumulative figure has risen to over £430 million. In terms of actual volume, exports bave alsn been increasing and amounted tn 35,000 units, a gaio of 7% compared to three months ago.

The price nf British exports has varied, though there has been some increase in prices cbarged by UK manufacturers selling in overseas markets. On average, the cost of exports has been about £1,200 per unit, which was marginally up compared to three months ago.

Evidently British manufacturers bave taken advantage of the drop in sterling and have boosted their sales overseas as a result. Nevertbeless, competition has remained quite fierce in some markets, and British firms have had to fight hard to keep their share at a satisfactory level.

A significant proportion of British exports have gone to the EEC countries, and useful increases bave been recorded in West Germany. Sales to that country went up by 18% to £10.6 million, while a marked rise was also seen in Italy, the Netherlands and Belgium.

In other regions, exports have been mixed, and there was a downturn in deliveries to the Middle East, particularly to Saudi Arabia.

In contrast, higher sales have been reported in the US, reaching nearly £2 million and, British firms have taken advantage of the strength of the dollar to step up their sales in that key market.

Significant gains in exports for certain products have been recorded, particularly for visual display units, where the trend has been firmly upward for some months. Sales of printers have also risen markedly, but, for other types of peripheral units, the trend has been very mixed.

It is expected that exports will continue to forge ahead, though it is difficult tn predict tbe actual trend in sales.

A further fall in the value of sterling is possible and this will help British companies to increase their sales in Europe and elsewhere.

Prices in some markets sre very competitive and British companies will have to watch tbeir price structure closely if they want tn improve their performance in nverseas markets.

For imports, a further increase is likely and the flood of foreign deliveries may grow even further in the coming months.

Some peripheral producers, particularly in Japan, are likely to step up their sales, especially as the British market for all types of computer products is likely to be quite buoyant during 1983.

At present, Britisb manufacture of peripheral equipment is being increased markedly, and expansion of productive capacity for computer equipment is being planned by many Britisb-based companies. With competition hotting up in this sector, UK firms will face tougb market conditions, though there is considerable scope for expansion both at home and overseas.

> **A further fall in the value of sterling is possible and this will help British companies to increase their sales in Europe and elsewhere. Prices in some markets are very competitive and British companies will have to watch their price structure closely if they want to improve their performance overseas**

> **Expansion of productive capacity for computer equipment is being planned by many British-based companies. With competition hotting-up in this sector, UK firms will face tough market conditions**

TABLE 1: BRITISH EXPORTS OF PERIPHERALS

	December 1982 £000	September 1982 £000	January-December 1982 £000
Belgium-Luxembourg	1,311	1,254	13,368
France	6,159	6,605	79,204
Germany (West)	10,647	8,990	91,814
Italy	5,092	4,373	46,936
Netherlands	2,532	1,575	18,060
Norway	806	791	7,212
Saudi Arabia	880	1,651	15,599
South Africa	1,648	1,235	19,008
Spain	1,697	1,568	18,059
Switzerland	1,644	2,184	18,059
Sweden	2,460	1,630	18,159
US	1,985	826	12,131

TABLE 2: VALUE OF EXPORTS BY PRODUCT GROUPS

	December 1982 £000	September 1982 £000	January-December 1982 £000
Peripheral units			
Disc storage units	7,388	5,329	53,596
Magnetic tape storage units	462	585	5,349
Other storage units	413	95	2,385
Printers	4,775	3,191	35,990
Readers and punches	464	651	8,275
Visual display units	15,794	15,276	170,210
Other terminals and consoles	353	761	9,073
Other peripheral units	14,353	14,475	148,691
Offline data processing equipment			
Punches, verifiers and calculators	22	11	297
Other equipment	911	1,022	9,525

TABLE 3: VOLUME OF EXPORTS BY PRODUCT GROUPS

	December 1982 No.	September 1982 No.	January-December 1982 No.
Peripheral units			
Disc storage units	3,715	2,140	28,155
Magnetic tape storage units	180	200	2,151
Other storage units	142	48	1,182
Printers	5,720	2,220	40,261
Readers and punches	171	163	2,177
Visual display units	15,399	14,749	167,961
Other terminals and consoles	273	309	4,314
Other peripheral units	9,661	12,882	124,978
Offline data processing equipment			
Punches, verifiers and calculators	110	11	1,021
Other equipment	669	680	6,641

TABLE 4: IMPORTS OF PERIPHERALS BY SUPPLIERS

	December 1982 £000	September 1982 £000	January-December 1982 £000
Belgium-Luxembourg	741	1,080	9,530
Canada	391	702	5,797
Denmark	607	877	8,362
France	2,431	3,600	36,565
Germany (West)	4,559	4,673	54,081
Ireland	2,197	1,732	17,760
Italy	2,413	2,549	29,117
Japan	3,908	3,347	34,012
Netherlands	3,234	2,948	29,772
Spain	531	378	7,516
Sweden	1,843	1,803	20,629
US	36,319	38,210	416,000

TABLE 5: VALUE OF IMPORTS BY PRODUCT GROUPS

	December 1982 £000	September 1982 £000	January-December 1982 £000
Peripheral units			
Disc storage units	13,013	14,949	157,393
Magnetic tape storage units	2,257	2,767	32,970
Other storage units	839	1,335	9,833
Printers	12,526	12,428	132,095
Readers and punches	547	418	3,972
Visual display units	8,876	8,697	96,643
Other terminals and consoles	2,003	4,043	32,165
Other peripheral units	22,052	20,527	239,635
Offline data processing equipment			
Punches, verifiers and calculators	29	18	681
Other equipment	722	936	12,297

TABLE 6: VOLUME OF IMPORTS BY PRODUCT GROUPS

	December 1982 No.	September 1982 No.	January-December 1982 No.
Peripheral units			
Disc storage units	18,340	15,313	167,206
Magnetic tape storage units	755	2,771	82,239
Other storage units	512	679	7,914
Printers	21,944	20,987	215,905
Readers and punches	1,825	2,300	12,442
Visual display units	19,637	14,411	168,597
Other terminals and consoles	2,947	4,456	58,809
Other peripheral units	22,028	25,535	298,250
Offline data processing equipment			
Punches, verifiers and calculators	178	33	1,228
Other equipment	1,729	2,254	29,025

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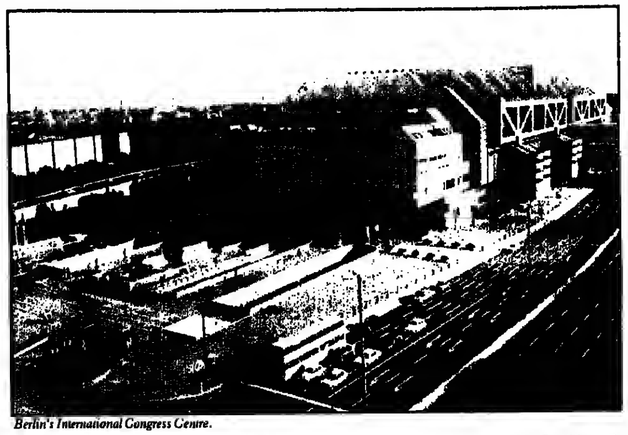
Over 1,000 European delegates attended Camp 83, a Berlin conference on business graphics. John Riley was there

European users turn out in force to get the CAD/CAM picture



Berlin's International Congress Centre.

THE conviction that a business graphics explosion is imminent in Europe was brought home to 1,300 top European users in Berlin last month.

The occasion, the first of an annual series of events called Computer Graphics Applications for Management and Productivity (Camp), was a major European stock-taking of the applications and potential of computer graphics for both business and engineering. Some 120 European and American speakers gave papers to delegates from 22 countries.

The aim of Camp '83 was tn provide a European forum for computer graphics tn boost awareness by European users. In particular, top German graphics people were keen to stimulate demand by German users to help the indigenous computer graphics industry. European graphics companies were present in force, and they clearly benefitted from US presentations whicb pin-pointed problems already experienced in the development of graphics systems in the US.

"We are not academics looking at computer aided design of the 21st century, but aim to show what is on the market today," said Professor Gunter Spur, chairman of the Camp '83 Organising Committee and Director of the Fraunhofer Institute for Production Equipment and Design Engineering in Berlin.

The week-long event, organised by German industry througb AMK Berlin in conjunction with the Eurographics Associatinn and the World Computer Graphics Association, took place in the International Congress Centre in Berlin, and was aimed at users.

Integrated with the papers was an exhibition by about 40 US and European computer graphics companies. The US graphics companies, whicb stand to gain just as much if not more than their European counterparts by increased European user awareness, dominated tbe exhibitinn. US companies included Computervision, Control Data, Digital Equipment, Hewlett-Packard, IBM, ISSCO, Prime and Tektronix.

"Tbe US is here to spy out the land. They know there is a major market in Europe and have come to learn as much as they can", said Tom McLeod, director of Design Technology with Plessey, and the only British member of the programme committee.

McLeod was disappointed by the poor turnout by British graphics companies at Camp '83. Three were represented, although only one, the Harsham-based Sigma Electronics Systems had a sole stand. Late last year Sigma formed a German subsidiary, Sigmex, to sell its graphics workstations.

Cambridge Interactive Systems' 2-D CAD/CAM designing system Medusa was shown by Applied Graphics Systems.

ICL was absent, although System Consult, a German software house which had stumbled across ICL's Perq, exhibited a borrowed machine. Considerable interest was expressed in the Perq by DP users representing several hundred key German companies, and ICL may have missed a valuable marketing opportunity at Berlin by preferring to put all its effort into the exhausting and anonymous Hanover Fair next month.

"The British absence was noticeable," said McLeod. "If UK vendors want to make an impact on the European market they ought to be here in force, as there are about 1,300 people looking out for what they are going to buy. People who have 20 systems here are not going to fly tn the UK to see a 21st."

European contributors to the congress were optimistic that Europe can catch up, despite the US lead in computer graphics. The chairman of the Eurographics Association, Professor José Encarnação pointed nut that Europe already had the capability fnr developing computer graphics in the 1960s, but could not afford to exploit it.

A recurrent theme was the enormous growth potential for computer graphics, especially via the business graphics sector. Bill O'Brien, marketing manager of Tektronix' Information Display Division, pointed to the growth in the US: "Now over 300 companies provide graphics equipment, while only four years ago there were 160. The worldwide graphics market is considered by several sources to be about $1.5 billion and the annual growth over the next few years is expected to exceed 30%."

He sees s lift off in business graphics usage, linked with certain trends. "Business users, who have installed four times as many computers as scientific users overall, are beginning to realise that they too can benefit from computer graphics tools for data analysis and representation."

Wider business use will, thinks O'Brien, lead to increased use of colour in graphics, increased human engineering in graphics displays, increased system interactivity with both more intelligence and speed, and to software which is easier to use.

Alan Paller, one of the directors of leading US graphics company ISSCO, and co-chairman of the Camp '83 Organising Committee, said business graphics was slow to develnp in the US. "We had solved the main technical problems — expensive hardware, poor quality equipment, non user-friendliness — by 1977 or 1978, but business graphics still didn't take off.

"The problem was awareness at the finance director level. The impetus for take-nff came two years later in an article in *Business Week* that convinced finance directors that a good presentation with visual aids gives a 67% competitive advantage. We are still waiting for a similar impenis to get take-off in Europe."

Hnwever, Peter Bono, chairman of the American Natinnal Standards Institute said: "It may be misleading to think of German companies being several years behind. They may be leading the rest of the world in getting into it. The US faces a battle to upgrade, with subsequent loss of investment. Being first doesn't always win you all the medals."

European contributors considered that Europe is now in a position to take up the challenge of overcoming the two main bottlenecks in CAD/CAM — the man-machine interface and data communications. Encarnação considered the European impetus to the new GKS (Grsphical Kernel System) standard has been a major contribution to data communications.

GKS (Graphical Kernel System) is the first formal computer graphics standard at the interface between the application program and the graphics utility system. The technical work in its development was led by the German Standards Institute, and is currently being adopted by Ansi, whicb bas dropped the unofficial US graphics ACM SigGraph Core standard.

There were many papers on electrical and electronic CAD, mechanical CAD, systems integration management and plant and constructinn design. Richard Simon, director of CAM product management at Computervision, talked about the synergy between CAD/CAM and robotic technology.

IBM, whicb occupied the most floor space, launched two application packages for CAD/CAM, one of which, CBDS2, is an interactive graphic CAD/CAM package for the design of printed boards and related wire routeing. US graphics software company ISSC announced new software to provide users of its Tell-a-Graf software with an interactive access to its data sources and its conversion into graphics.

Another US company, Tektronix, introduced its new 4691 ink jet colour copier, and Calma showed its new 7000 and 170 CAD/CAM systems, together with a new volume oriented software package. The other companies showed a range of their current business graphics and CAD/CAM equipment and software.

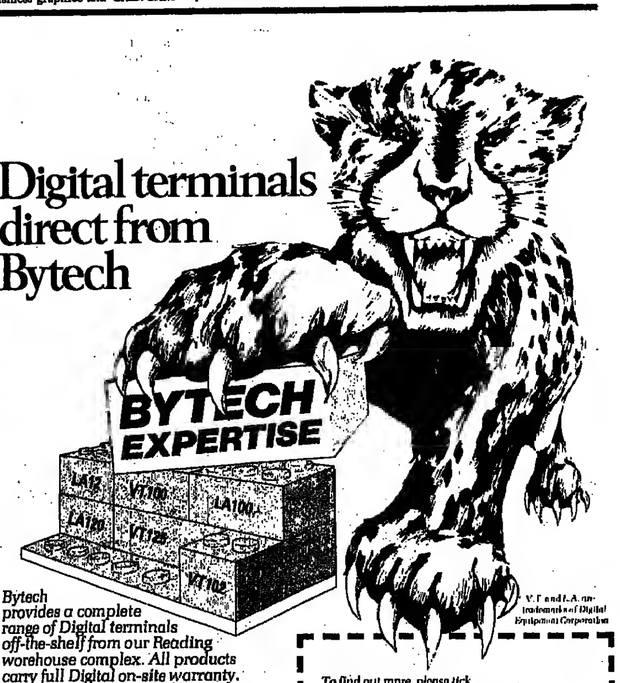
British company Sigma Electronic Systems, which has a raster graphics workstation implementing the GKS standard in firmware, attracted much attention. Sigma marketing manager Ray Spicra said: "I'm surprised by the amount of interest. Peter Bono has been bringing people to our stand, and has been impressed."

One Japanese graphics company was present in force. Graphica Computer Corpnratinn, which manufactures computer graphics systems and image processing systems, introduced itself in the European market, and invited applicatinns for its European distributorship. President Dr Kansei Iwata was there and said that there had been a "tremendnus response and much interest".

The congress and exhibitinn is to be an annual event, and will provide a European Forum for graphics and computer aided design for the foreseeable future.

Pmf Spur summed up the overall trend of which the event is a part: "In the nineteenth century entrepreneurs combined all aspects of a company — sales, distributinn, managing — but now tbese activities have becomc specialised. With computers we are now moving back to integrating these specialist activities."

Mel QD... Disappointed at the poor turnout of UK companies.



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Why does the Data Protection Bill offend so many? Hannan Rose argues defining the Bill leads to understanding

How the lawyers learned to ignore computers

COMPLAINTS about the Data Protection Bill have been legion. The perceived threat to individual liberty has resulted in attacks on the Bill from MPs of all political persuasions and from civil rights people, the legal, medical and social professions, and from the House of Lords – but no word so far from the computer industry.

When looking at the source of such widespread concern, then, it is as well to begin at the beginning – which means looking at definitions.

The main ones are in Clause 1 of the Bill – but don't let your attention slip. There are a number of further definitions at the end of the Bill (Clause 37: "General Interpretation") which include those of "data equipment" and "data material", so they can hardly be considered irrelevant.

Indeed, no definitions are minor and they can provide endless matter for debate. Even more pertinently, as one lawyer in the Lords remarked, definitions and phrasing can provide an endless source of income to his profession and it would be sad if the first attempt to legislate for the effects of computing only served to bring both legislation and computing in to public disrepute.

This is a considerable danger. The lawyers who draft, interpret, advise and adjudicate may have a long tradition of dealing with, for example, property, contracts and wills, but have no previous experience with computers. The Data Protection Bill tries to get around the problem by not dealing with computers at all, but with data and the processing of it.

The Bill has raised complaints from the National Council for Civil Liberties, lawyers, doctors, social workers and organisations concerned with giving personal advice such as Citizens Advice Bureaux.

It does not, however, seem to have impinged on the consciousness of those primarily concerned with the operation of computers, even though one of the responsibilities of a profession is generally considered to be an awareness of the implications of the activity for society generally.

The definition of data has raised a few eybrows. Clause 1 (2) of the Bill offers the following: "Information recorded in a form in which it can be processed by equipment operating automatically in response to instructions given for that purpose".

Government Ministers reading their briefs at the despatch box have stated that "they" (and "their advisers") are aware of technological developments. They know that many things already "can be" processed automatically – and that OCR and voice recognition systems will sooner rather than later bring virtually anything within the scope of the definition.

Further, they are not perturbed by the imprecision of the term "operating automatically", but rather feel that it would be wrong to be too specific.

The government's position is that the definition of data should not be considered on its own, because data is not controlled by the Bill. In fact, it is only "personal data" (defined in Clause 1 (3)) which is governed and then only if it is used.

The definition of "data user" is, therefore, critical to the provisions of the Bill – and it is Clause 1 (5) which defines a "data user".

This new creature in the legal system is defined as "a person who holds data." A person "holds" data if:

(a) the data form part of a collection of data processed or intended to be processed as mentioned in subsection (2) above; and

(b) that person (either alone, jointly, or in common with other persons) controls the contents and use of the data comprised in the collection.

There is, of course, a general complaint that the terminology used in Acts in Parliament has become totally incomprehensible to the ordinary citizen – thus keeping the lawyers employed.

This is exacerbated by the fact that much of the detail is left to secondary, or delegated legislation, which has sometimes been more complex and even longer than the primary law – and the Data Protection Bill is no exception.

Clause 36 deals with the "regulations, rules and orders" made necessary, specifying four orders which require positive approval by both Houses of Parliament, two orders and one set of rules subject to amendment by either House, and an unlimited number of regulations "prescribing fees for the purposes of any provision of this Act" which merely have to be "laid before Parliament after being made".

It would, however, have been desirable to produce a definition of "data" which could be applied again in the future. And while they are about it, a comprehensive definition of "user" might also be valuable.

More could be achieved – and more simply – if Clause 1 (2) defined "data" as "information recorded in a form in which it has been or is intended to be processed by equipment operating automatically in response to instructions given for that purpose" and Clause 1 (5) defined "data user" as "a person who (either alone or jointly or in common with other persons) controls the contents and use of a collection of data as defined in subsection (2) above".

Even within Clause 1, a further point arose in the House of Lords' Committee discussion of the Bill which at least merits a second thought.

Clause 1 (7) defines "processing" in relation to data as "amending, augmenting, deleting or re-arranging the data or extracting the information constituting the data". The Opposition suggested that "transferring" should be added to the list of operations defined as processing but Lord Elton, the leading Home Office Minister defending the draft, rejected the proposal as unnecessary.

The awful spectre of lawyers earning their living from this legislation arises with a case in prospect with the defence that personal data had been transferred – but had never been extracted from the original file.

Even in a relatively cursory examination of the Bill such as this, reference has been made to the distinction between "information" and the "data" which constitute it and it is necessary to be sure that this distinction is properly followed through the Bill.

Equally, there are the other definitions of the Bill, not to mention the powers given to the Registrar in Clause 16 to seek authority from a circuit judge to enter premises "to inspect, examine, operate and test any data equipment found there and to inspect and seize any documents or other material found there" and to the Tribunal in Schedule 5, Clause 4 (2) (d) "for the inspection, examination, operation and testing of data equipment and the testing of data material". These, of course, depend on the definitions of "equipment" and "material".

At which point, it would seem appropriate to invite members of the computing profession to obtain copies of the Bill as it will be following its Third Reading in the House of Lords.

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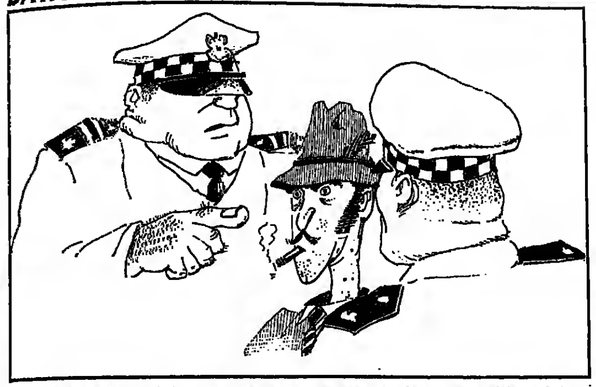

Hannan Rose has read the small print to find . . .

Just who – and why – is exempt from the Bill?

READING the small print is by now a way of life for the wary. And it is the "small print" in the form of exemptions from the provisions of Part IV of the Data Protection Bill that has been at the root of some of the major political confrontations on the Bill in the House of Lords. These exemptions are sure to raise issues for the "data user" – people using computers – when the Bill comes into effect.

Despite a series of challenges forced to the vote, the government gave no ground whatsoever on Clause 28, which covers personal data held for the prevention or detection of crime, the apprehension of offenders, the assessment or collection of any tax or duty or the control of immigration.

The exemptions particularly remove the primary right established by the Bill for the "data subject" to have access to the information held about him or her and the complementary prohibition upon the "data user" from disclosing such information.

In political terms, the Opposition accepted that the prevention or detection of crime and the apprehension or prosecution of offenders are activities in a special category. But it felt that there was no justification for giving special status to the information in the other categories which was not related to any criminal offence.

In practical terms, the problem for data (computer) users will be that the threat of persons ("data subjects") taking action against them for unauthorised disclosure is not removed. The Bill only provides that in proceedings against any person for contravening the non-disclosure provisions "it shall be a defence to prove that he has reasonable grounds for believing that failure to make the disclosure in question would have been likely to prejudice any of these matters."

It would seem, therefore, that the onus in any case will rest with the defence – and there is no indication of what "reasonable grounds" will be, still less any indication that any of the authorities concerned with these matters will provide evidence – particularly prior, written evidence – to support the defence.

The most likely situations, therefore, are of the friendly local bobby calling upon the car hire company and persuasively asking for assistance in searching for a terrorist, and the Inland Revenue or Customs and Excise requesting help in assessing possible taxes or duties.

Of course, the company would refuse – but is this likely?

As we have seen, they are not going to be able to rely on the support of those "asking for their co-operation" should action be taken against them. And will they even know, that Clause 28 (2) still leaves them subject to proceedings in which they will have to prove in their defence that they had "reasonable grounds" for believing that they were acting within the provisions of the legislation?

Further, the protection which the Bill claims to give the individual "data subject" from the invasion of his or her privacy is very much restricted in this area.

Normally, the Registrar would be the "data subject's friend" and act to ensure that personal data has been obtained and processed fairly and lawfully – the first "Data protection principle".

The Registrar has powers to prevent contravention of the principles by serving enforcement notices upon delinquent users, or ultimately de-registering them. However, the Registrar will not be able to use these powers if they "would be likely to prejudice the purposes" of fighting crime, collecting taxes and duties and controlling immigration.

The problem is even more serious when matters of national security are involved. It is not surprising that the government has exempted data in this area entirely from the Bill – and from the control of the Registrar.

It is no longer sufficient for "a Minister of the Crown" to certify that personal data are held by a government department for the purposes of safeguarding national security. Nor is "a certificate signed by or on *behalf of* a Minister of the Crown" (emphasis mine) sufficient to exempt the disclosure – in the interests of national security – of data not primarily held for such purposes or to exempt personal data held outside government.

In all cases, the signature of a Minister of the Crown will be required and "Minister of the Crown" has now been defined as "a Minister who is a member of the Cabinet, the Attorney General or the Lord Advocate."

But there is no review or scrutiny of such exemptions. A "certificate signed by a Minister of the Crown" is, in each respect, "conclusive evidence of that fact" and "a document purporting to be such a certificate . . . shall be received in evidence and deemed to be such a certificate unless the contrary is proved."

To suggest "review or scrutiny" is not to suggest giving all subjects access to the national security files on them.

There is a certain demonology in the popular imagination both about the information gathered and held "in the interests of national security" and about the power of computers. Putting the two together is likely to create fears about the power of the state.

A number of other countries which already have data protection legislation have placed a person on the staff of the Registrar who already has security clearance, so that there can be some check that exemptions are not abused.

This does not remove the responsibility on any user to provide data in the interests of national security, nor does it give the individuals the right to know what data is held about them "in the interests of national security."

All that can be done in this area is to ensure that those invoking this wide purpose – which by its very nature is difficult to define – think before doing so. The present Bill would give them no cause to think at all.

The "official" response which might be anticipated is that ministers will be accountable to Parliament for any misuse of the powers created by the exemptions. But how many ministers admit responsibility, let alone resign, because "mistakes" have been made by civil servants in their departments? Above all, in this area, how would ministerial responsibility work, for how would anybody know that the power of exemption had been misused when it is not open to any review or scrutiny?

It is, perhaps, asking a lot for the official imagination to accept this case. This is particularly so when the Department concerned is the Home Office, where the responsibilities – like those of Ministries of the Interior in other countries – are essentially ones of control (notably police and prisons) and the society is Britain, where the secret services officially do not exist and similarly telephones officially are not tapped.

However, this might be a good opportunity to set a new pattern.

The review and scrutiny of exemptions for national security could even be an occasion for strengthening the constitutional provisions for parliamentary control over the executive.

The Registrar will be required to make an annual report to Parliament and this would include a report of whether any instances had been found of the powers of exemption being misused. No details would be given, but Parliament would be given the real authority to control the government on behalf of the citizens as "data subjects".

The case has even greater force in that the government has adamantly refused to grant exemptions to others than itself.

This is important for as Members of the House of Lords pointed out on a number of occasions, there would be a danger that such material would be taken off computers, or that industry and commerce would hold back from using computers while there was no parallel law relating to manual records.

This focuses attention on why this issue is of importance to the computing industry and those who work in it. Exemptions might appear to be a political issue, but one of the desirable effects of the Bill would be to create greater confidence in, and acceptance of, computing.

It would be counter-productive if data protection legislation had the effect of encouraging organisations to keep – or even take – their records off computers and increased rather than allayed public fears.

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Can computers solve the problems of our inner cities?

A venture that is claimed to revive urban areas has run into opposition in London . . . Boris Sedacca reports

Con areas like this be reborn with the help of computers?

WHEN an organisation is put in charge of spending public funds it is always in something of a cleft stick. If it meets its objectives with the money made available to it, and can show some financial surplus at the end of the day, it is accused of profiteering at the public's expense.

If it spends more money than has been allocated to it to meet these objectives, or if it doesn't meet these objectives within its financial constraints, it is accused of squandering public funds. And when such an organisation is backed by a profit-making company, it can become the subject of critical public scrutiny.

City Venture Corporation, backed among others by Control Data, has found itself in such an unfortunate position. City Venture is involved in inner city regeneration projects. Control Data's contribution to City Venture is based on its Plato educational software.

Plato has evolved over a period of some 20 years from its origin as a co-operative venture between the US government and the University of Illinois. The initial emphasis was on remedial education, or "remediatioo" io the company's own jargon.

In the aftermath of the inner city riots which rocked the US in 1968, Control Data looked at its own backyard in Minneapolis.

"We can do our part," said Control Data chairman William Norris at the time.

A large part of inner city populations lacked a basic education, so Control Data began to take part in inner city regeneration projects across the US.

Over the next ten years, Control Data continued its work in the Minneapolis/St Paul twin city community, in the process instituting a work experience scheme at Control Data for female heads of households, which allowed working mothers to put in a five-hour workshift during morning school hours.

In 1978, Norris and other business and church leaders decided that the problem of inner city decay needed a new approach, as a result of which City Venture Corporation was set up.

The company seconded a full-time vice president to the task, Herbert Trader, who was put in charge of urban and rural ventures for Control Data. Trader joined Control Data in 1961, and from 1978 served concurrently as the founding president of City Venture.

He is currently responsible for the overall management and co-ordination of Control Data Worldtech (US), the Control Data Business and Technology Centres, and two Control Data managed consortia, City Venture Corporation and Rural Ventures. He reports to Control Data's executive office.

City Venture's declared long-term goal is economic self-sufficiency for communities. "We did not want only to provide skills for entry-level jobs," says Trader.

"Our Fairbreak programme addressed areas additional to remediation to cover other aspects such as how to find a job and how to keep it. Obviously the value of such a programme was not restricted to inner cities but to things like prison education for example."

Control Data instituted 148 Fairbreak programmes in total, of which five or six had the participation of City Venture.

City Venture currently has ten project areas in the US — and some put heavier emphasis on computer-based education than others.

In recent years, projects have also been instituted outside the US but in the UK, City Venture has begun to attract considerable criticism from local pressure groups.

One of these groups, the Newham Employment Consortium, says: "We are concerned to highlight two of these new projects in Britain, and to expose them for what they really are — massive subsidies to an American computer company which will provide inappropriate and expensive technology."

The criticisms have some merit, but tend to be one-sided.

In a document entitled A Critical Appraisal of City Venture Corporation's Draft Proposals for South Canning Town, the Newham Employment Consor-

GAME . . . "Community of businesses."

tium claims that City Venture is nothing more than a marketing subsidiary for Control Data insofar as its solutions are always based on Plato without due regard to local problems of inner city decay.

A consortium similar to City Venture, called Worldtech Ventures and involving Control Data UK, British Steel, Pilkington Glass, Sun Life Assurance, and the Co-operative Bank promotes City Ventures projects in the UK.

City Venture's proposals for Canning Town are divided into three main sections: job creation and retention strategies; education, training and job accessibility strategies; and community revitalisation.

Within these main sections the major recommendations are for a Business and Technology Centre (manufacturing and office space leased to small businesses); a seed capital fund (using money from public agencies, private businesses, financial institutions, and civic groups for investment in high risk businesses); centralised planning and management structures; development of the Thames Wharf/Limmo site; and comprehensive job readiness training, career awareness training, academic education and technical training, all based on Plato.

The Newham Employment Consortium contends that in its discussion draft, City Venture stressed the need for full community participation st every stage of the proposed project but has made little attempt to follow up its initial consultation witb community groups.

"We are convinced that different strategies can be developed which are far more cost effective and more appropriate to local needs, and which will result in new jobs and community revitalisation for Newham.

"We strongly urge the London Docklsnds Development Corporation to reject the City Venture proposals for Canning Town and to give urgent and immediate attention to seeking and supporting alternative proposals which will be responsive to the needs of the community and which will succeed in the stated aims of job creation and community regeneration."

As far as the Newham Bmployment Consortium is concerned, the most positive aspect of City Venture proposals for Canning Town is that they highlight a number of areas of local need.

"We accept that there is a need for private as well as public investment in the community," it states. Its objections are based on three main points:

(1) City Venture's lack of objectivity as a consultant;
(2) The inappropriate nature of the proposals for Canning Town;
(3) City Venture's record in the US.

"In the United States, City Venture has frequently been criticised for offering the same standard package to each community it goes into. It is precisely this standard package which is now being offered to Canning Town: a package determined by Control Data's product and service range and in no way tailored to local needs.

"We are also very concerned that throughout City Venture's draft proposals there appears to be tacit assumption that the proposals represent a substantial investment of private funds in the community, yet City Venture's projects in the United States have been funded overwhelmingly from city, State and federal public sources.

"City Venture has been conspicuously unsuccessful in attracting investment from private sources other than from Control Data. In the past, Control Data has taken the opportunity to have its own assembly plants in City Venture project areas. Recently, however, the parent company has closed a number of such plants — just as it had closed its only British assembly plant, CPI Data Peripherals in Stevenage.

"In every plant closure that we have heard of, Control Data has proposed converting the plant into a Business and Technology Centre, a move which is in line with Control Data's shift in emphasis from hardware production to the sale of services and software."

The consortium argues that City Venture has made no detailed local analysis of the age, sex or skills of unemployed people in the area, no analysis of existing industry or commerce either in Canning Town, in the rest of the borough or in London as a whole, and no summary of existing transport or other service infrastructures.

Referring to Business and Technology Centres, the consortium states: "Despite City Venture's talk of 'A complete range of computer-based technology', their centres have been based exclusively on systems and programs supplied by Control Data and its subsidiaries.

"Again this might not matter much if Control Data products and services were appropriate to small businesses in Canning Town. But Control Data computer systems, based on access by telephone lines to massive and remote mainframe computers, are — as described by

TRADER . . . Seconded by Control Data to take charge of City Venture.

a number of computer experts — best suited to very large corporate businesses or to university applications.

"Such systems are unnecessarily complex, prone to technical malfunction, and several times more expensive than the far more adaptable microcomputers used in other technology centres."

The experts the consortium refers to include Robin Bradbeer of the Polytechnic of North London Electronic Engineering Department, former editor of *Educational Computing* and chairman of the hobbyist-oriented Association of Computer Clubs; Ian Stoble, assistant editor of *Practical Computing*; and Penny Otley, described as a Cambridge researcher who has been studying direct access to computers in working class communities in the UK.

Bradbeer is quoted as describing Plato as "a sledgehammer to crack a nut" where it has been used in a £1 million Manpower Services Commission project in Coventry.

He claims that the job could be done at one-tenth of the cost using micros.

Bradbeer also attacks Micro Plato, based on Control Data microcomputers. "Although Micro Plato is less expensive than the central Plato system, it still remains relatively expensive compared to similar systems supplied by other hardware manufacturers.

"The average Plato package is very large; for example, even on a disc unit that can store 10 Mbytes, about 90 discs would be needed just for the basic skills 20-hour course."

Bradbeer's alternative, though useful as ammunition for the Newham Employment Consortium's criticisms of City Venture, has a somewhat simplistic ring.

Micros would provide keyboards to pupils more cheaply but it is doubtful whether any one manufacturer has developed comprehensive educational software on the same scale as Control Data has with Plato. Micros can play a useful role if the aim is to teach pupils about computers and programming, but that is not Plato's primary aim.

Plato sets out to teach conventional subjects using computers as the main medium. The Newham Employment Consortium looks at it another way, dismissing the systems as merely an expensive automated book.

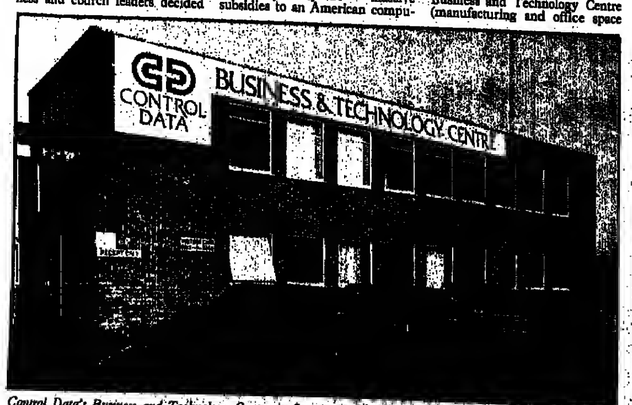
It is difficult to establish whether the issue is one of micros versus mainframes, or the Newham Employment Consortium wanting more say in the Canning Town project. The question must be whether City Venture should be expected to deal with established authorities and local pressure groups at the same time, and which of the two it should be accountable to.

The company must now expect to be under constant public scrutiny. Its reputation, and that of City Venture in particular, will depend on whether it can make its Business and Technology Centres work. The first of these was opened at the discontinued CPI Data Peripherals plant in Stevenage in February and has attracted 16 new businesses ranging from upholstery and car valeting to the design of computer packages for graphics and automatic test equipment.

Mike Game, BTC manager and former personnel manager of CPI Data Peripherals, describes the centre as "a community of businesses" intended to see vulnerable small enterprises through the vital first few years of operation.

Diversification often brings about headaches for a company and Control Data has had its fair share of them. Quite apart from the subsidiaries it controls, Control Data is determined to make Plato viable after pouring $900 million and many years of development into it without showing a profit.

However, Norris is confident of Plato's swing into profitability this year and business worth $200 million in 1984. In the 1990s Norris expects Plato to be the most profitable division of Control Data.



Control Data's Business and Technology Centre in Stevenage. CDC's reputation depends on the success of such ventures.

■ MicroPro has formed a UK subsidiary and appointed David Butcher (above) as its director. The new company will provide all-round support to MicroPro's UK distributors and its OEM customers. Butcher was previously based at MicroPro's Canadian office and was responsible for sales in most of Canada and the State of Michigan.

■ Storage Technology has created four senior positions of business manager in the UK. Clive James has been appointed business sector manager for the government and public utilities companies; Graham Shelley as BSM for finance and transportation; Roy Dodda as BSM for insurance industry; and David Howearth as BSM for the manufacturing sector in the North and the Midlands. All appointments have been made from within the company.

■ Marconi Space & Defence has appointed Peter Lloyd as commercial director. He joined Marconi Avionics in 1969 and was appointed commercial mansger of its Rochester unit in 1976.

■ Kennedy International has appointed Richard Welham as its new service manager. He was formerly with Riva Terminals, where he was engineering mansger.

■ Paddy Sandford-Johnson has joined AMROP International, the interoational executive search partnership, as director and partner of Canny Bowen & Associates. His experience in the computer industry has included four years in sales with IBM, and five years as computer controller at the Rank Organisation and Rank Xerox.

■ Hi-Tek has expanded its microcomputer distribution activities with the appointment of two microcomputing specialists. Pat Ingram, formerly manager of the Cambridge Computer Store, has joined the company as computer marketing executive. Peter Godley, also formerly of the Cambridge Computer Store, has joined Hi-Tek as microcomputer applications engineer.

■ Wyly Corporation has elected Gregory Llemandt chairman and chief executive officer of the corporation and its wholly-owned subsidiary University Computing Company (UCC). He was formerly chairman and president of Geisco. He has also served as chsirman of Software International and as a board member of Structural Dynamics Research and General Electric Venture Capital. He has held management positions with ITT, Booz-Allen & Hamilton and the 3M company.

■ Floating Point Systems has appointed Bruce Jonas as technical marketing mansger. He was formerly with CAD/CAM specialist Computervision, where he was in product marketing.

■ Barry Motton, formerly marketing director of Westrex, has been promoted to managing director of the company. He replaces Fred Allen, who has retired following medical advice.

■ Olympus has announced three management appointments: John McDnwell has been made general manager, marketing; John Batley becomes general manager, finance; and Tony Ronsley has been appointed general manager, administration.

■ Neill Skidmore (below) has joined Technical Support People as general manager, responsible for the recruitment of contract and permanent staff. He has spent 14 years in the recruitment business, with such organisations as the SOS Group, Windsor Executive and Business People.

■ Microsoft has appointed Scott Old (above) vice-presideot of international operations. He will be responsible for the firm's operations in Europe and Japan. He was previously the company's director of international operations, and before that was founder and vice-president of Sequoia Group in California.

■ Bernard Kaintock has joined Computerland, Southampton, as a system sales representative. He was formerly a member of the British Caledonian aircrew, and after that worked for major computer suppliers and manufacturers. John Covington, appointed Computerland's systems adviser in November last year, has been promoted to general manager. He will be responsible for opening new stores under the terms of the franchise agreement held by Sperrings.

■ Postfield & Co has set up a subsidiary company called Postfield Electronics. It will market the products of Swiss telecommunications company Autuphon and will be run by managing director Leonard Hardy, formerly manager of telecommunications engineering at British Airways.

■ Donald Neddonriep has been appointed group vice-president of the product division of Sperry Corp's computer systems operations. He was previously vice-president and general manager of software products.

■ Peter Russ has been appointed managing director of Anker Data Systems — for the second time. He joined Anker Group in Germany in 1965 and came to the UK three years later. He was appointed managing director of ADS UK in 1977, but left in 1979.

High Technology information research company Dataquest has appointed John Hoyden (left) as senior vice-president for Europe. He was previously founder and managing director of Stack Gmbh, an information exchange and resource sharing company dealing with advanced semiconductor technology. Previous marketing experience includes jobs with Plessey, Corning Glass and Dow-Corning. On Hoyden's right is Malcolm Penn, who has been appointed an associate director of Dataquest's semiconductor industry service. Penn has worked in Dataquest's London office as a senior research analyst for the last six months. Before that he was with ITT Europe.

DIARY

APRIL 11

Wine tasting and AGM. IDPM Norfolk branch. Castle Hotel, Castle Meadow, **Norwich**. 7.30.

Prestel's gateway to the world — a practical demonstration of the latest developments in Prestel by Granada TV Rental. IDPM Scottish branch. Lloyds & Scottish, Orchard Brae, **Edinburgh** 4. 7.30.

Visit to Tektronix UK. BCS Bedfordshire branch. Tektronix, **Harpenden**.

Social effects of the technological revolution by Dr Colin Hicks of the DoI. BCS East Anglia branch. Suffolk College of Higher and Further Education, Rope Walk, **Ipswich**. 7.00.

APRIL 12

Visit to air traffic control centre. IDPM West London to Oxford branch. Numbers are limited, so phone Maren Talbot on 01-380 8087 to book. Air Traffic Control Centre, **West Drayton**. 7.30.

Privacy and the auditor. BCS Auditing by Computer Group. Connaught Rooms, Great Queen Street, **London** WC2. 4.30.

From today, photography is dead, by R. J. Lansdown of the Computer Arts Society. Followed by AGM. BCS Cheltenham and Gloucester branch. Carlton Hotel, **Cheltenham**.

APRIL 13

Robotics, IDPM Birmingham branch. New Imperial Hotel, Temple Street, **Birmingham**. 7.30.

Microcomputer applications. BCS Coventry branch. N Block, Coventry (Lanchester) Polytechnic. 7.30.

APRIL 18

Databases — will they ever be available to the end user? BCS Hampshire branch. Mountbatten Theatre, **Southampton**. 7.30.

CONFERENCES

■ The **Manchester Chamber** of Commerce & Industry is holding a seminar on May 12, about selecting computers. It has been estimated that four out of five users waste money when choosing computing equipment; either because they pay more than is necessary, or because they do not get what they need when the system is running. Advice will be given on how to deal with suppliers, and how to go about changing, adapting or upgrading an existing system. Cost of the seminar is £8 + VAT for members of the MCCI, and £16 + VAT for non-members. Further information from O. Calvert on 061-832 5574.

■ Jean Ichbiah, John Barnes and Robert Frith, all members of the original Ada language design team, are giving a three-day seminar on the subject on May 4, 5, and 6 at the Royal Garden Hotel, London. All three speakers have been closely involved with Ada from the initial design phase through the evaluation which led to the final Ansi standard published earlier this year. "Ada is now set to replace Cobol," comments Ichbiah. "It is, above all, a general purpose programming language. Now is the time for managers to assess Ada vis-a-vis future software systems." Further information from the conference organiser, David **Seekings**, on Bedford (0234) 48338.

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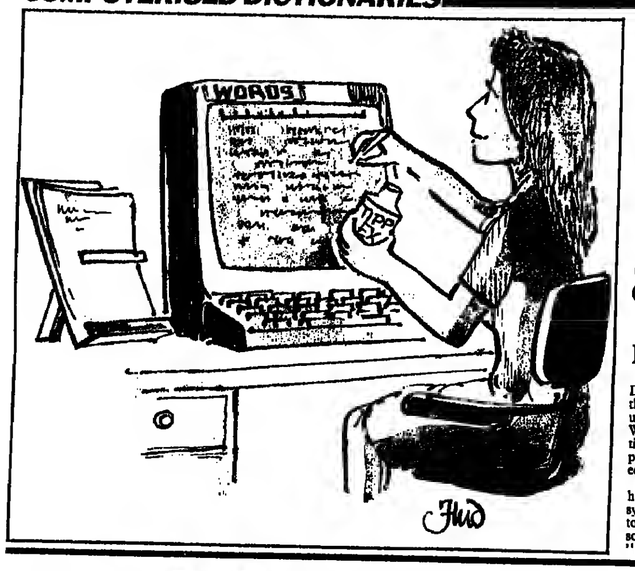

The trouble with storing words in a messy language

How to get to grips with some Anglo-Saxon snags

IN the old days we expected mathematical calculation would take up almost all the machine time. We were wrong again. Most of the time on a modern interactive computer system is spent in the text editor, not in running programs.

Word processors, online databases, and expert reference systems with shared logic are going to make the situation even more so. Maybe we should talk about "text cruncherS", instead of "number cruncherS", when we refer to CPU intensive machines and programs.

When computers crunched numbers, there were many techniques for compressing them in storage such as writing them in binary or floating point formats. Alas, computerised word handling is too new to have a firm set of conventions. This article deals just with the trouble of storing a simple dictionary file.

The first problem is that English is a messy language. The old Anglo-Saxons were a bit like bad programmers; they added patches here and there as needed and the documentation never has kept up with the system development. Improvements have been made, but without any scheme to them.

The only totally regular language is Esperanto. It is the only language that is easy to implement on a computer. Converting the world to Esperanto is not a bad idea, but in the meantime we had better find some tricks for computerising English.

The first question is how to sort a dictionary file. Do all capital letters come before all lowercase letters, like in the Ascii collating sequence? Does each capital letter come before its matching lowercase letter? We could avoid the problem by converting all capital letters to lowercase.

This approach has a bad effect on proper names or the initial word of a sentence, but we can program around some of that. Simply try the first word of each sentence in both upper case and lower case form when looking it up in the dictionary.

After there is an agreement on how to arrange the alphabet, there needs to be an agreement on how to arrange words. Get a copy of the catalogue rules from a library, and see how they handle proper names, foreign words and other things.

Presume that this hurdle is leaped; we now have a very large file that needs to be indexed and compressed.

A good compression technique depends on the fact that the dictionary file is in alphabetical order. The first n letters of consecutive words will be identical. At the start of a new section in the dictionary, n is equal to zero, but most of the time n would be at least one and probably greater.

Therefore, you can replace the first n letters with a number which represents the number of letters it shares with the previous entry. This technique can go on throughout the section.

An example taken at random from a real desk dictionary is the list "Midas, midday, midden, middle", which maps into "Midas, 3day, 4en, 4le" (presuming that the list started with "Midas" of course).

The advantage is that you do get a good compression of data. The main disadvantage is that adding or deleting words is a bit harder than it would be in a non-compressed dictionary: You must read it sequentially from the nearest prior full word.

An algorithmic approach to generation of English words from root words will not work too well: English, like most spoken languages, is an irregular language. Programming and Esperanto are the only place you can find regularity. Some prefixes and suffixes simply do not go with some roots without regard to any logical rules.

Just consider the simple problem of forming plurals. You do not just add an "s". If the word ends in "x", "z", "s", "ss", "sh", or "soft "ch", then add "es". If the word ends in "f" or "fe", drop that ending and add "ves".

Get a good secretary's or grammar handbook and look up the full set of rules — there are about 20 of them!

Sometimes you cannot assess what the root was from the compound. In English the final consonant before the final "e" is doubled when adding some suffixes. However, the words "writting" and "writling" are both legal.

It would be nice if the dictionary had information for inserting hyphenation. The immediate solutions are simply to store the hyphens in the file or to develop an algorithm to compute the proper position for them.

by Joe Celko

Wordbreaks and hyphenation are not the same thing, however. For example, it is possible to hyphenate a word of five or fewer letters. This is not an allowed wordbreak. It is possible to hyphenate the prefixes "un-der", "up-per", "in-to" and so forth, but the preferred wordbreak would be after the prefix, not in it. This means that the dictionary should also know the order of wordbreak preference.

Algorithmic hyphenation can miss the mark. English is just a messy language, and there is not much you can do about it. The word "therapist" will most likely be divided as "the-rapist" rather than "ther-apist". "Ther-" is an uncommon syllable. Syllables are supposed to have both vowels and consonants in English, right? It is only those Slavs who use words without vowels.

The word "queue" will drive most algorithms up the wall; the pair "eu" should stay together in English, but that leaves three vowels together.

Explicit hyphenation costs extra space in the dictionary file. If we combine the trick of using the initial letter count with explicit hyphenation, some space can be traded for the advantages of hyphenation. We could re-write the list in the numeric compression example by using the numerals to mean the number of letters in the first syllable of the previous word.

Thus "Mi-das, mid-day, mid-den, mid-dle" would become "Mi-das, d-lay, 3-len, 3-lle". The computer could store large numeric values in binary format and not lose too much space.

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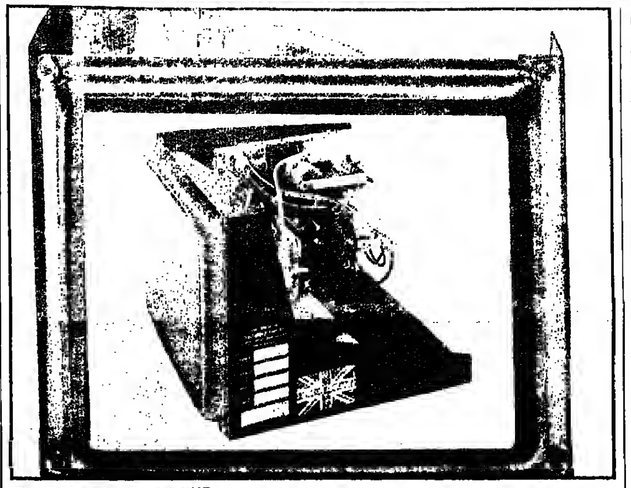
MIS/OL is supported by full documentation and Pansophic Systems' comprehensive installation and maintenance service.

Pansophic Systems (CW), Achilles House, Western Avenue, London W3 0UA. Tel: 01-993 5985.



The MC700 chassis monitor from KME.

Flat face CRT displays for OEMs

KENT Modular Electronics (KME) has added to its range of Clearline display monitors with a functionally styled seven-inch unit, the MC700.

This compact monitor features an extremely flat screen (three metre radius of curvature compared to 0.6 metre of, say, a nine inch CRT) and a 4:3 aspect ratio.

MC700 has 22 MHz video bandwidth enabling a crisp, clear display of 80 columns by 24 lines to be achieved easily. It has been designed for microcomputers, test and measurement equipment and medical instrumentation.

MC700 incorporates the CRT, scan coil, a single driver board (Type MB12) in a lightweight zinc treated black steel chassis. The driver board makes extensive use of KME—designed thick-film hybrids ("dipstrates") to form key circuit elements, so reducing the number of on-board components and enhancing reliability.

MC700 operates from a 12 volt dc supply and can be specified for use with TTL level or Composite Video inputs. Signals and power are connected via a 10-way standard edge connector.

Resolution is 700 TV lines at the centre of the display, 500 lines at the corners. As an option the screen can be supplied with an anti-glare screen.

Kent Modular Electronics (CW), Maidstone Road, Rochester, Kent ME1 3QL. Tel: (0634) 44712.

Cartridge tape drive is Q-bus compatible

DIGI-DATA has announced another product in its Series 70 microcomputer bus compatible cartridge tape drive systems, based on the Digi-Data Model 6420 quarter-inch cartridge tape drive. The Model 70Q is Q-Bus compatible, and joins other recently-launched Series 70 models offering compatibility with RS-232, S-100 Bus and Multibus. It enables Digi-Data to offer good cost effective Winchester disc back-up for the majority of microcomputer systems.

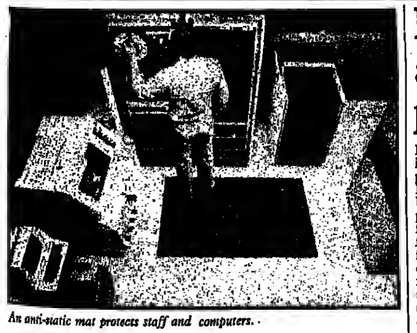
Model 70Q emulates DEC's TM11 and TU10 magnetic tape subsystems to provide up to 16.9 Mbytes of formatted storage on the LSI-11 Q-Bus. One quad controller, embedded in the Q-Bus, handles up to two 17 Mbyte tape drives. The system is supported by DEC's RT-11V4, RSX-11M, V4.0 or RSTS/E V7.0 operating systems without need for modification.

Digi-Data's 70Q controller has a 16 byte buffer permitting record blocks of up to 65,536 bytes; the effective storage rate is 1.22 Mbytes/minute for eight Kbyte blocks.

The Digi-Data Model 6420 drive on which the 70Q is based records 6,400 bpi data on four tracks, to offer total unformatted capacity of 17.3 Mbytes on one 450-foot tape cartridge.

Users can read or write data in blocking or streaming modes at 30 ips, with a data transfer rate of 24 Kbytes/second. Block searches are performed at 90 ips.

Digi-Data (CW), 18 King Street, Maidenhead, Berkshire SL6 1EF. Tel: (0628) 29555.



An anti-static mat protects staff and computers.

Mat stops the shocks

ANTI-STATIC mats for computer rooms and offices are available from the supplies firm Inmac.

The tweed-look mats come in gold or brown. The smaller, measuring three feet by five, costs £59. A four-by-eight mat costs £95.

Inmac also has heavy-duty black polythene mats for places such as word processing stations. The surface does not impede the movement of castored chairs. The mats are earthed by a six-foot wire. They cost £123 for a mat measuring four feet by five and £38 for a mat of one foot by 1.5.

Inmac says walking across an office carpet can generate tens of thousands of volts of static electricity. Touching a metal object can give a person an unpleasant shock – and even alter the contents of the memory in a computer or terminal.

Inmac (CW), 18 Goddard Road, Astmoor Industrial Estate, Runcorn, Cheshire WA7 1QF. Tel: (09285) 64321.

Random access printing

INTERACTIVE Structures has introduced a new concept in printing buffers – one IS PipeLine with random access printing. Users can select sentences, paragraphs, graphs, or pictures from different programs, even different computers in random fashion to compose a finished document. They can then print the finished document quickly and simply, in a single operation. It is available through distributor Pete and Pam Computers.

For example, graphs can be inserted into reports, addresses put in form letters, multiple copies made automatically, and letters put together out of component paragraphs.

To save time, the PipeLine also includes conventional FIFO operation: data is loaded into the buffer as fast as the computer can send it. PipeLine feeds the data out at the right speed for the printer. First data in is the first data out.

Pete and Pam Computers (CW), New Hall Hey Road, Rossendale, Lancashire. Tel: (0706) 227011.

Pascal-2 offers faster speed

A PROGRAM run-time speed 30% better than Motorola's Pascal is achievable using Pascal-2, which is now available under Motorola's Versados operating system. The Pascal-2 compiler provides a full standard Pascal and supports full 32-bit integer arithmetic. The compiler is implemented in Pascal and has been proven over the last two years on DEC systems. It is available from Unit-C or Worthing.

Pascal-2 comes complete with a user manual and incorporates several years of experience of Pascal compilers running on DEC machines. Written in Pascal and designed with structured methods, the Pascal-2 compiler includes internal overflow and consistency checks.

Tested since May 1980, Pascal-2 has proven to be stable and robust in diverse user environments on several combinations of operating systems and processors.

The Pascal-2 language includes several extension for programmer convenience, I/O flexibility, and level operations. Convenience extensions include: "External" procedures, for separate compilation; and "include" directive, for combining multiple source files in one compilation; flexible ordering of declaration sections; structured constant declarations; and default "otherwise" clause in the "case" statement.

I/O extensions include random access files and additional parameters in "reset" and "rewrite" to specify external file names.

Low-level extensions include: "And", "or", and "not" operators on integer types; "or", and "nnt" operators on integer types; "origin" variable declaration that assigns a variable in a specific address; octal and hexadecimal constants; "ref" pointer generation functions; "loophole" function for type coercion; and "size" and "bitsize" memory allocation functions.

The Pascal-2 compiler accepts one or more source files to directly produce relocatable binary object files compatible with the Versados Linker.

A Compilation option will generate assembler source code for assembly by the Motorola assembler. The source input to the compiler may be a complete program or a module composed of procedures and functions to be compiled separately and later linked with other routines.

Users developing code for standalone 68000 applications can incorporate the concurrent programming package. The standalone package allows concurrent programming in standard Pascal, using monitors and predefined "primitives" to synchronise concurrent processes. The package allows true priority scheduling and the ability to write device drivers in Pascal.

Sources are included.

Unit-C Ltd (CW), Dominion Way West, Broadwater, Worthing, West Sussex BN14 8NT. Tel: (0903) 2121140.

BOS takes charge of the accounts

ATLANTIC Software has acquired distributorship for BOS – Business Operating System. Comprising of a basic suite of 10 fully integrated software packages, covering all the principal operations in a typical small to medium business.

Financial information storage and retrieval, and word processing requirements, are catered for under the BOS operating system with the following programs: sales, purchase and nominal ledgers, invoicing, payroll, inventory control, word processor, fixed assets, database and report writer.

BOS Sales Ledger handles all sales accounting from invoicing and allocation of remittances to statements and remittance advice for up to 2,000 customers and 2,000 transactions per period. Invoicing produces invoices and credit notes and can be supplied integrated to sales and inventory control. Purchase Ledger processes invoices, credit notes and journal entries from receipt to subsequent payment, cheque writing, credit transfer and remittance can all be generated.

Nominal Ledger accepts accounting data either from the Purchase Ledger or entered manually. It can handle up to 100 different companies and 100 separate departments. The number of nominal ledger code is often in excess of 1,000.

Payroll processes payslips for companies with up to 1,000 employees and caters for 99 different departments. Both weekly and monthly payslips are catered for plus provision for short runs, le selected employees at holiday time.

Atlantic Software (CW), Minerva House, Spaniel Row, Nottingham. Tel: (0602) 412777.

Oyez system can handle any quantity

QUANTITY surveyors are offered three ways of entering data to prepare bills in a package just announced by Oyez Text Processing of London, and Norden Computer Systems. Data can be entered on slips of paper sent to Oyez for processing, input into a remote terminal linked to the Oyez Interset IS2000 minicomputer, or data can be fed in from a specially designed electronic drawing board.

The first method is for small practices of quantity surveyors and does not require any hardware, because all the processing is done by Oyez. The second method requires the surveyor to buy a North Star microcomputer, which is connected to the Oyez minicomputer.

The main innovation is the third method: electronic drawing board equipped with a pen for calculating areas and volumes of parts of buildings.

The Oyez electronic drawing board.

Oyez Text Processing (CW), Oyez House, PO Box 55, 237 Long Lane, London SE1 4PU. Tel: 01-407 8055.

A new range of bursters and decollators is introduced by Business Aids.

Burster range with the accent on simple design

A RANGE of bursters and decollators has been launched by Business Aids, and the emphasis is on simplicity of design and reliability. The range of seven models was specifically designed to handle print output generated by mini and microcomputer installations.

The BABS range of bursters and decollators will separate, cut and trim forms and remove carbon papers, as well as re-stack forms ready for immediate use.

To accommodate the smallest user, who may not handle large quantities of continuous forms, the range starts with two small non-powered models: the BABS Burster 'H and the Combo.

The Combo is a simple little machine, and its operating speed is only a little less than sophisticated powered models. Priced at £395 it is designed specifically for the new breed of minicomputers.

The Mini-burster has an operating speed of up to 125ft per minute and its progressive speed control will permit thin and difficult papers to be run. It will trim and separate multi part sets in continuous form into separate sheets and stack them in sequence in the output tray. This model is available with or without side trimmers and a centre slitter. Available as either a bench or stand model it is priced from £795.

The smallest machine in the range of decollators is the BABS A Frame vertical model. Its variable speed control permits the selection of the most suitable running speed for each paper size and weight. This machine will run at up to 350ft per minute and there is a quick release spindle for easy and clean removal of carbon. It is fitted with orbital castors for easy movement to any work point.

The BABS DEC 2, DEC 3 and DEC 4 models are multi-station decollators, with running speeds of up to 350ft per minute, and will handle continuous stationery forms up to 240gsm.

Business Aids (CW), 3 Whitby Avenue, London NW10 7SQ. Tel: 01-965 9821/7.

Fast data acquisition to disc

AN LSI-11/23 based microcomputer data acquisition system optimised for high speed throughout to or from disc storage age has been introduced by Data Translation.

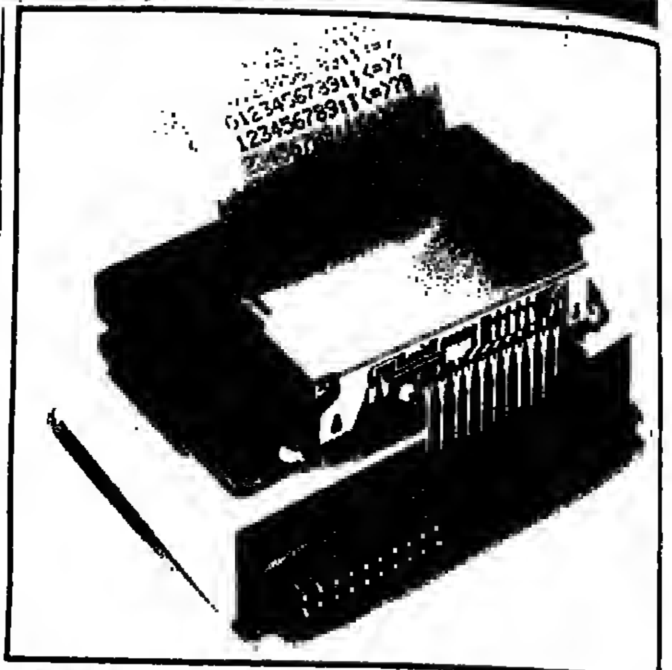
The DT4136 Lab-Datax system is described as taking up to 17.8 million analogue data points to disc storage at 96kHz without the loss of a single data point.

The Continuous Performance Lab-Datax System includes an analogue-to-digital interface which digitises up to 32 high level differential channels with 12-bit accuracy. A RAM channel file allows the programmer to scan through a list (of up to 256 elements) containing any number of channels in any order.

Data acquired at up to 96kHz can be continuously stored to the limit of the system's Winchester disc either 8.9 or 35.6 Mbytes. The Continuous Performance System is also capable of acquiring to memory up to 98,048 12-bit analogue data points at a 250kHz aggregate rate.

The DT4136 includes a two-channel 12-bit analogue output system which can generate data continuously from disc at an aggregate rate of up to 96kHz. Analogue output may also be generated in a sweep of up to 98,048 values at an aggregate rate of 400kHz from memory, and the DT4136 may be optionally expanded to eight analogue output channels (using four interfaces).

Data Translation (CW), Bath Road, Slough. Tel: (0628) 36608.



The System 700 from GMT Electronic Systems.

A low-cost printer

A LOW-COST printer range called System 700 has been introduced by GMT Electronic Systems. The printer is based on GMT's own mask programmer controller and features comprehensive character set and control facilities.

It is especially suitable for the increasingly wide range of applications where portability or compact design is important, says GMT.

System 700 printers can accept the 96-character Ascii set either serially or via a parallel interface. This is done by combining the GMT controller with Epson miniature dot matrix impact printers and allows external selection. The range of baud rates can also be externally selected when operating in the serial mode.

When in the graphics mode use of the full print area is possible, a single dot line at a time. The printout can be inverted in character mode with both upward (text mode) and downward (data mode) paper feed possible.

The System 700 uses standard calculator plain paper rolls and a simple ribbon cartridge. Printout can be in either 16 or 24 columns.

An alternative control board incorporating an EPROM version of the control chip is available.

GMT Electronic Systems (CW), Newport House, 27 Hartfield Road, London, SW19 3TD. Tel: 01-947 7234.

Multi-channel data logger

A RANGE of rugged, portable data logging equipment is to be made by Computing Techniques Mfg as the result of an agreement with the Natural Environment Research Council.

The first launch is the Mussel, a multi-channel data logger which has been ruggedised for field operation in extremes of temperature, moisture and pressure. Its ease of operation and rugged construction means that it can be set up and read in the field by non-technical personnel, say the manufacturers.

It can record from one to 12 channels of information and has 10 sampling intervals ranging from 30 seconds to 24 hours. The memory module, which is separate from the actual logger, can store from 4K to 32K readings of ±1999.

The Mussel is battery-powered with facilities for solar recharge in its moisture-proof case.

It has been designed to interface with most transducers ranging from analogue through to complex conductivity modules.

When the Mussel's memory is full, a replacement unit is fitted and the full one returned for translation by microprocessor.

Two reader units have also been developed to enable data to be read manually and sensor outputs monitired in situ.

Computing Techniques Mfg (CW), Brookers Road, Billingshurst, West Sussex RH14 9RZ. Tel: (040 381) 3171.

Keyboard eliminates frame

THE KD131 from Digitran's Keyboard Division has a novel patented hinged moving plate design which enables the keyboard to be lower, lighter, and less costly than competitive products in the high performance category.

The keycap design is similar to the IBM Selectric III style, and the caps are double-shot moulded.

Prototypes are available for OEM customers within eight to 10 weeks, with production volumes available after July 1.

This new lightweight, low-cost product has eliminated the frame – the keys are attached directly to a specially designed printed circuit board. Although an optional frame is available, the current design enables an enclosure to support the keyboard directly. The frame elimination not only improves the product, but allows for a price reduction of up to 10% below current designs, says Digitran.

The KD131 features an improved "capacitance in reverse" style switch that pushes a moving plate away from the PC board, rather than toward it, as in Digitran's current design. In addition to its low-profile efficiency, the keys are able to operate with a consistent 2± ½ ounce depression force.

Applications include word processing, CAD/CAM, small business, and microcomputer as well as electronic typewriters, graphics terminals, and virtually any workstation that requires the most modern, up-to-date, low-profile keyboard technology.

The keyboard is available with or without an enclosure, in any custom configuration, and the keys and case can be provided in the colour of a customer's choice.

Typical of many custom keyboards, the KD131 provides a 10-bit 300 baud serial asynchronous output.

Digitran Company (CW), 855 South Arroyo Parkway, Pasadena, CA 91105. Tel: (213) 449 3110.

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Ranging from mass storage to software, and from IBM to the best vertical market, the conference will run alongside the first Computer Trade Show at the International Wembley Conference Centre and be held on April 26 and 27, 1983.

Make a date to share the experience of suppliers and vendors alike.

PROGRAMME TUESDAY, APRIL 26

09.30 Registration and Coffee.

10.00 **What hardware should you sell?** - What products and types of devices are here to stay, and more importantly, which can make money for you?
MICHAEL DOCHERTY, Northember Ltd.

10.30 **What software should you sell?** - it is tempting to go for the established products such as CP/M, Wordstar and Visicalc. But is this the best route to success?
RUSS NATHAN, Romtec Ltd.

11.00 **Who should you sell to?** - are vertical markets the way forward, or is a more general approach to marketing called for?
JOHN RICHARDS, Joint Managing Director, Optim Computers

11.30 Coffee

11.45 **Support - how much should you give?** - are cut prices and a cash and carry attitude preferable to comprehensive user support?
TREVOR LAFFERTY, Nexal

12.15 **What a software house looks for in a dealer?** - a leading software house explains its selection criteria.
MIKE YOUNG, Managing Director, Systematics International

12.45 Lunch

14.00 **Selling and licensing through large manufacturers** - you may have a product needed by a major computer company.
SPEAKER FROM BURROUGHS

14.30 **Dealing with the majors 1** - ICL and the Trederpoint scheme.
RAY PIGGOT, Director of Traderpoint Sales Division, ICL

15.00 **Dealing with the majors 2** - IBM and its attitude to third party vendors.
NIGEL HENZELL THOMAS, Personel Computing Dealer Marketing, IBM UK Ltd.

15.30 **Dealing with the majors 3** - DEC and its authorised dealer scheme.
MIKE HARDING, Personel Computing Group, DEC

16.00 Close.

WEDNESDAY, APRIL 27

09.30 Registration and Coffee.

10.00 **What's new? - hardware developments** - Everything you ever wanted to know about micro floppies, low cost printers, Winchesters and local area networks.
PAUL SHIMELL, Technical Director, Microscope.

10.30 **What's new? - software developments** - database management, operating sytems, and the latest trends in applications software.

11.00 **Putting it together - the problems of plug incompatability** - A look at putting together turnkey packages.
MAURICE HAMLIN, Managing Director, Atlas Computer Consultents

11.30 Coffee.

11.45 **Marketing your own product** - a software house case study.
GWYN JONES, Business Micro Systems Ltd.

12.15 **Selling yourself** - how to get your name known by the right type of customer.
JOHN MCNULTY, McNulty's Interchange

12.45 Lunch.

14.00 **Don't ignore the man in the street: a case study** - High volume. Low cost products may be right for you.
JOHN ROWLAND, W.H. Smith & Sons Ltd.

14.30 **Selling into business: a case study** - higher unit costs appear attractive, but is the commercial user a tougher nut to crack than the home user?
TONY MCDOWELL, Managing Director, MKA Ltd.

15.00 **Selling a US product in the UK** - there's a vast pool of packages across the water. How, and why, you should sell them to the British consumer.
DAVID IMBERG, Ashton Tate.

15.30 **A future look** - where will you be in a year's time?
Speaker from ACT

16.00 Close.

and here's your invitation

REGISTRATION FORM Please complete in block capitals and send to: Conference Administrator, Room 1313, Surrey House, Throwley Way, Sutton, Surrey SM1 4QQ. Tel: 01-643 8040. Ext. 4890 and 4892.

Please indicate which sessions you will be attending April 26 ..... April 27 ..... The fee of £170 plus £25.50 VAT for two days or £90 plus £13.50 VAT for one day covers attendance, coffee, lunch and conference documentation. Tax invoice will be sent.

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CONTRACTS

Systems and Programming

U.K. ASSIGNMENTS

VAX/VMS/BLISS West of London
Programmers with above experience required URGENTLY for 3 month contract. Knowledge of BCPL would be an acceptable alternative. Ref: Elaine 993

CORAL 66/PASCAL – INTEL/PDP NW England
Various levels of expertise required for these 4-6 month contracts to start end April/mid May. Realtime experience a must and knowledge of message switching and MASCOT advantageous. Ref: Elaine 1001

MOTOROLA 6800 Fife
Assembler, BCPL an advantage. Realtime applications, 6 months Ref: Laurie 998

PROCESS CONTROL FORTRAN
Fortran Programmer, process or industrial control, guidance or Avionics experience. 2 months in Central London, 3 months offshore, starting April. Ref: Laurie 999

IBM 8100 London & Blackpool
COBOL, Team Leader, Programmers & Analyst/Programmers, 6-8 months to start ASAP. Ref: Bridget 997/1004

IBM 3033 London
Applications Programmers with COBOL CICS & DLI. Ref: Bridget 1005

IBM SERIES 1 London
Programmers with good IBM Series I experience using RPS operating system and either Assembler or PLI. Ref: Bridget 1002

IBM 4341 Essex
Programmers with OS/VS1, COBOL, CICS & DLI. Ref: Bridget 1008

ICL 2900 London & Bedfordshire
VME/B, COBOL, IOMS or IOMS-X, 5 programmers, 6 months to start mid April. Ref: Laurie 986/994

ICL S25 ASSEMBLER Middx
Programmers for itemised customer billing system. Ref: Suzanne 985

Norsk Data System Engineers Oxfordshire
Systems Engineer to handle internal and external products and deal with users. Start date ASAP, duration 2 years. Ref: Suzanne 982

HP3000 Image Programmer
Start date ASAP, duration 6 months. Straight forward programming, nominal ledger system. Ref: Suzanne 973

WANG VS80 Programmers City
Programmers required for financial application – Start date April, duration 6 months extendable. Ref: Suzanne 973

UNIVAC 90/30 DMS TIP Herts
Straight forward programming, minimum of two years experience. Start date ASAP, duration 6 months. Ref: Suzanne 1000

PDP11/70 Programmers City
Our client requires programmers for various applications i.e. order processing ledgers. Must have Basic or Basic+2 and RSTS/E. Start date April, duration 3 months extendable. Ref: Suzanne 975

DATAPOINT ARC Programmers Kent
Programmers required to start in June, duration 3 months. Insurance broking systems experience an advantage but not mandatory. Ref: Suzanne 978

OVERSEAS ASSIGNMENTS

IBM 4300 Gulf
Systems Analyst with DLI and able to train others – 6 months duration. Ref: Bridget 1003

PDP11/RSX11M+/FORTRAN Holland/UK
Senior Programmer to work 9 months in Holland, 6 months in UK to start ASAP working on distribution system. A knowledge of MACRO 11 advantageous. Ref: Elaine 995

IBM SYSTEM 34/RPGII Holland
Analyst/Programmer required urgently for 4-6 months to work on an order entry system; must be able to work quickly and efficiently. Ref: Elaine 992

TELEPHONY/PASCAL/CHILL Belgium
Experienced designer/programmers required with telephony knowledge using CHILL/PASCAL. Ref: Elaine B92

BURROUGHS COBOL France/Belgium
COBOL programmers required with either DMS or LINK for long term projects. Knowledge of French required. Ref: Richard 1011

OPERATIONS

CONTRACTS Contact Lorna Fraser or Ken Lynn

IBM System 34 Operator Hertfordshire
Good operating experience with knowledge of RPGII if possible starting immediately for a period of 2 weeks to 3 months. Ref: C2

IBM System 34 Operator Northampton
Working days, solely running the system from 11/4/83 for one week. Ref: C3

ICL 1904S – George III Farnborough & Bristol
High standard GIII operators and shift leaders required for contracts lasting one or more years starting immediately and the near future. Ref: C4

IBM 4331 – DOS/VSE VM SHADOW Brussels
Ref: C5

BURROUGHS B1900 – MCP/DMS Amsterdam
Ref: C6

EUROPE Siemens 7760/7571 Europe
Long term special rates
Operators, Senior Operators, JCL Writers, with BS2000 operating experience and knowledge of terminal network management systems. Ref: C1

PERMANENT Contact Lorna Fraser

IBM 4341 VM/SP CMS West End to £6,500
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GRADUATE PROGRAMMERS:- With a good numerate degree and at least six months' experience in industry, you will probably be making your first move. Some knowledge of communications would be useful but more important is a desire to gain experience in a technically demanding environment. Knowledge of a language such as PASCAL or 'C' is desirable.
The Company is recognised as a market leader in innovative software development, particularly in communications and provides a well-defined career path for the technically motivated individual who also wants to work in a friendly atmosphere.

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PROGRAMMERS

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The company is young, successful and growing rapidly. The work will involve variety, supporting the sales force and working with a large user base. If you have good communicative and technical skills and wish to have more information, phone Kevin McCourt or write enclosing full C.V. Interviews in London and Reading.

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GSD SOFTWARE HOUSE

Software House seeks ISM System 34 and System 38 Programmers/Analyst Programmers to work on challenging new projects in London and surrounding area. Successful applicants with two years' + RPGII or RPGIII will substantially increase their present salaries, their technical knowledge and their career prospects with this established and rapidly expanding company. Ref. A1

INSURANCE IN THE CITY

This company, a major force in the international insurance Markets, is currently seeking Analyst/Programmers and Systems Designers to work on their ISM mainframe in the City. Your COBOL or PL1 programming background combined with some experience of Analysis and/or design will command a salary of up to £13,000. Ref. A2

IMS OR CICS? £9,000-£13,500

Our client, based in West London/Middlesex utilizes dual IBM mainframes and is seeking to recruit IMS or CICS Analyst/Programmers for a variety of development projects scheduled for 1983/4.
COBOL, PL/1 and APL are all used within the data processing department and a minimum of two years' programming expertise with IMS or CICS is required in order to enjoy the numerous company benefits offered by our client. Ref. D1

COBOL PROGS & ANALYST/PROGS £7,000-£11,000

The systems development team within this successful London based company is constantly expanding in order to meet demand from its UK subsidiaries. Hence our client is seeking to recruit a number of COBOL professionals keen to progress their career in an interactive, database environment.
Candidates should possess a minimum of 18 months' mini or mainframe COBOL. You will be given the opportunity to join a friendly team within a challenging environment and learn new techniques. Ref. D2

SENIOR IBM PROGRAMMERS To £13,000

This dynamic Services organisation based on the Sucks/Barks border is seeking to appoint several Senior Programmers offering at least two years' experience in PL/1, 370/303n COBOL or 8100 COBOL. Applicants should possess knowledge of Database and/or TP and be confident to assume responsibility for small projects when required. Self-motivated individuals will enjoy the fast moving environment and be rewarded with high salaries and quick promotion. Ref. K1

YOUR 2nd JOB To £10,000

With at least two years' COBOL programming experience, our client can offer applicants an excellent career move into an Analyst/Programmer role at their ISM 4331 DOS/VSE installation in NORTH SURREY. Good IBM knowledge, experience of VSAM and the ability to liaise competently with users will provide you with the opportunity to join a stimulating DP environment working on Stock and Financial Recording systems.
A good range of benefits also apply. Ref. K2

SYSTEMS ANALYSTS – YOUR NEXT PROJECT

If you can offer at least two years' commercially based systems analysis experience then our client, a very successful financial organisation, could offer you the opportunity to join an on-line, distributed processing system development based upon very powerful minis linked to a mainframe. Career development to the business analyst role exists and a commencing salary of c£10,000 can be expected for this company based in NORTH SURREY. Ref. R1

COBOL, CICS & DL/1 To £10,000

Our client, located in the CITY OF LONDON, is seeking to recruit PROGRAMMERS or JUNIOR PROGRAMMER/ANALYSTS to join their CICS DL/1 project environment. The people appointed can look forward to gaining exposure to program design and analysis to provide them with career progression. If you can offer around two years COBOL then telephone us now to progress an application. Ref. R2

These are just some of the career opportunities that we are currently assisting our clients to fill. We would be pleased to talk to you regarding these and many other vacancies that we are currently aware of. Telephone one of our consultants to discuss your particular requirement and how DP Selection can help you.

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Retailing Systems
Thames Valley £13,000+

Experienced designer required to work on new merchandising systems to be implemented on mini computers. Candidates must have knowledge of and experience in this area. Our client intends to sell this product internationally and is able to offer excellent career prospects and relocation assistance. Ref. 0704/A.

CORAL Programmers
North Hampshire £8,000-£14,000

Expanding software house specialising in real time software development in the military and industrial systems field requires additional staff at varying levels. For the junior positions a minimum of six months' programming experience using CORAL is essential. More senior candidates will also need experience of GEC 4000 or DEC equipment. Ref. 0704/B.

Analyst Programmer
Middlesex £8,500-£10,000

'No. 2' required for small department. Responsibilities will include development of systems for sales orders processing, accounting and personnel records whilst maintaining manufacturing systems. Candidates should have two years' experience in a commercial installation and preferably some design skills. Ref. 0704/C.

Electronics Engineers
Surrey up to £12,500

A formal qualification in electronics allied to at least two years' software development experience is required to meet our client's need for people to work on a wide range of complex defence systems. Microprocessor or CORAL experience would be advantageous. Excellent benefits package including relocation is offered. Ref. 0704/D.

Automation Systems
Rural Herts £8,000-£10,000

Subsidiary of large group developing instrumentation and automatic control systems seeks two additional staff to join existing teams. Candidates must have a qualification in a numerate discipline and two years' programming experience Ref. 0704/E.

Analyst Programmer
North-West London £11,000-£13,000

The UK subsidiary of a major US Systems House specialising in transaction processing and networking systems needs a sound COBOL programmer with good design skills. The company's products aimed at the Banking, Financial and POS markets, are implemented on TANDEM hardware on which full training will be given. Ref. 0704/H.

Programmer/Graphics Artist?
Landan £8,000-£14,000

Unusual requirement for a visually creative programmer with knowledge or appreciation of graphics. Candidates who should have a tertiary qualification should be able to work accurately and quickly to 'journalistic' type deadlines. For this position personal attributes are more important than specific technical skills and full training will be provided on VAX hardware, PASCAL and graphics. Ref. 0704/F.

Office Automation
Herts £10,000-£14,000

A market leader is developing new products for the automated office and requires several technicians at varying levels to join the projects. Candidates must have a minimum of two years' real-time programming experience and ideally knowledge of UNIX and 'C' language although formal training will be given. Previous exposure to LANs and Networking would be advantageous. Excellent career prospects and relocation assistance offered. Ref. 0704/G.

Systems/Software Engineer
North Landan up to £12,000

Our client needs systems and software specialists to monitor the work of project teams to ensure that defined quality standards are met in the design and production of high reliability systems. Participation will be required in Design and Technical reviews as well as project progress meetings. Ref. 0704/J.

COBOL Programmers
Landan/Surrey/Middx. £8,000-£14,000

Two major software and consultancy organisations require programmers with good COBOL skills, preferably gained on IBM, ICL or DEC hardware, to work on a variety of projects in the commercial and financial sectors. Excellent training and promotion prospects for self-motivated candidates able to demonstrate communication and leadership skills. Ref. 0704/K.

Systems Programmer – VME/B
Hants £9,500-£11,500

Our client needs a systems programmer with six months' minimum experience supporting SCL and various superstructure products in a large VME/B installation. Prior work should include two years using VME/B and a total of five years on ICL hardware would be preferred. Ref. 0704/L.

ICL Programmers
London £7,000-£13,000

A rapidly growing systems house with several projects in the financial area requires more staff with three years' programming experience the most recent of which must be 12 months solid COBOL under VME. The rewards offered will depend upon how much relevant experience candidates can offer. Ref. 0704/M.

Real-time Expertise
Surrey Border £12,000-£17,000+

High technology systems house needs designers and consultants to be involved in development and installation of Air Traffic Control and Telecommunications systems. Familiarity with Assembler or real-time/mathematical languages is desirable. Substantial remuneration package and relocation offered. Ref. 0704/N.

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The growth area ie in Civil and Defence real-time applicatione—professional Consultants and Implementors are needed urgently. Applicants must have at least six years in-depth experience on a wide range of projects covering commercial applications, general real-time command and control systems in Civil and Defence markets. Detailed VAX/VMS experience is essential, together with a good degree and technical competence in high-level languages, e.g. Coral, Pascal, Algol 68, RTL2 or Cobol. A proven record ie sought in design, test, development and implementation of real-time systems. A knowledge of MASCOT methodology is desirable.

CONTACT– Pam Hale immediately

CWG1

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To £16,000

Major international firm of consultants experiencing rapid growth need additional DP professionals. A background in one or more of the following would be ideal: financial systems, insurance, modelling, IBM mainframes.

SYSTEMS ANALYSTS
£12-£14,000

A wide selection of excellent new opportunities exist throughout London and the Home Counties. Experience of on-line systems and Database highly desirable.

IBM COBOL
To £8,000

Financial organisation need 12 months' sound commercial programming experience in either DOS or OS/MVS environments. CICS and Database training available where necessary.

PL/1 PROGRAMMERS
To £12,000 + Mortgage

Several PL/1 Professionals with 2 years'+ experience are required by our client. For the more senior positions CICS and Database exposure is preferred. A number of major development projects are in the pipeline and the company places strong emphasis on career development and training.

MVS/OS/DOS COBOL
£7,500-£12,000 + Benefits

We have numerous openings for Programmers with at least 12 months' IBM Cobol experience. Junior to Senior positions exist in manufacturing, financial, banking and systems house environments.

MINIS – PROGRAMMERS AND A/Ps

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LONDON AND HOME COUNTIES

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ANALYSIS AND DESIGN to £14,000

Genuine Analysis and/or System Design skills are required by this leading company. The environment is sophisticated IBM and candidates, apart from being self-motivated with good inter-personal skills should have experience with ON-LINE and DATABASE systems using PL/1 on Cobol.

INTERNATIONAL BANK
PROGRAMMING to £13,500

Become involved in the development of a comprehensive new International banking system. Our clients offer unrivalled opportunities for bright, young Programmers with COBOL, ODS/VSE, CICS and/or DL/1 experience.

BANKING
ANALYST PROGRAMMER to £12,000

Depending on your experience, particularly on DEC-based BANKING systems, our client, an International City Bank, require your services. Programmers, who can demonstrate an understanding of BANKING or FINANCIAL applications with at least two years' experience, and the ability to encountar and learn new systems, should apply immediately. A comprehensive BENEFITS package and a pleasant work environment are just some of the points to consider.

INTERNATIONAL BANK
RPG PROGS./ANALYSTS to £12,000

This prestigious financial organisation require several people with a minimum of 18 months' RPG II experience. Preferably you would have gained this in a banking environment together with some exposure to analytical duties. Normal banking benefits apply after three months' qualifying period.

MAJOR OIL COMPANY
SENIOR ANALYST to £13,500

This company, the leader in its field, requires an Analyst with proven supervisory skills, to lead a professional team working on On-Line COBOL and Database projects. Emphasis will be placed on analytical and user liaison skills with every opportunity for further advancement.

MAJOR MANUFACTURING CO.
HP PROGRAMMERS c. £10,000

Develop your programming skills towards an analyst-ist role in a progressive On-Line environment with a company undergoing major new developments, planned into the mid-80s. Ideally you should have two years' solid COBOL programming experience with some exposure to HP utilities such as QUERY, VIEW, IMAGE or RAPID.

INTERNATIONAL SOFTWARE HOUSE
£12-25K

EUROPE & U.K.

Our clients will train you in Consultancy techniques if you have 18 months' PL/1 experience coupled with an On-Line and Database background. You should be willing to work abroad, and ready to learn new programming methods, as training is always given.

ELECTRONICS
COBOL, BASIC+, +2 c. £9,500

A vacancy has arisen within a manufacturing firm for PROGRAMMERS or ANALYST PROGRAMMERS with a minimum of 18 months' experience. Knowledge of RSTS/E or VMS on VAX is desirable but just as important is the candidates' attitude towards RESPONSIBILITY as the post requires self-motivated and articulate individuals capable of dealing with USERS and able to work under a minimum of supervision.

LIFE ASSURANCE
PROGRAMMING & ANALYSIS to £13,000

This company, heavily committed to effective information processing and due to continual development, require further staff. IBM COBOL and On-Line experience, particularly if allied to team leadership, would be especially appropriate.

MANUFACTURING
SENIOR PROGRAMMERS to £10,000

Programmers of Analyst Programmers wishing to specialise on a Solid COBOL background in a COMMERCIAL environment will find their skills rewarded in this well-known KENT-based company. Working both with ICL and HP hardware, this could be the next CAREER MOVE for candidates who feel their skills and talents are unrecognised in their present posts. There is plenty of room for expansion within this company.

INDUSTRIAL
PROJECT RESPONSIBILITY c. £11,000

Our clients are looking for Analysts with a flexible approach and three years' Analysis experience with On-Line/Database in an IBM environment. Effective communicators are needed for the development of Financial and Marketing Systems.

CONSTRUCTION
ANALYST PROGRAMMERS £ Neg.

ICL ME29 experience is a must. Our client is a well-known company currently seeking COBOL Analyst Programmers. They require mature and responsible individuals willing to undertake development work within a small group. You will need to demonstrate a good applications range and a minimum of three years' experience. A good BENEFITS package is offered in addition to a negotiable salary.

MIDLANDS

SOFTWARE HOUSE
PROGRAMMER/ANALYST c. £9,000

A Programmer/Analyst is required with good DEC PDP-11 experience, probably using BASIC+ with the RSTS/E operating system. Experience in a software house, or project management in a manufacturing environment would be considered ideal.

MANUFACTURING SYSTEMS
ANALYST/PROGRAMMER c. £9,000

BASIC experience on any type of minicomputer is required by this thriving Systems house. Experience of writing bespoke packages, or in the manufacturing environment would be most suitable.

CONSULTANCY
GBD SYSTEMS £ Neg.

Do you have Programming or Analysis experience using RPG on a System 34, or 38, and wish to move into a consultancy role? Our clients offer the opportunity to obtain experience of the new IBM GBD machine, when it is released.

MAJOR INDUSTRIAL
ANALYST c. £9,000

If you are an experienced Analyst, with some programming ability, here is your opportunity to join a new division of an International Manufacturing Company. Our clients are looking for a key member of an existing new project and can offer excellent scope for development.

TCR are always keen to hear from Systems and Programming staff with Commercial experience who are looking for a change of environment. Contact either office for an informal and confidential discussion.

TCR

Targa Computer Recruitment

6 Liverpool Street London EC2M 7NH Telephone 01-283 9941 Telex 25851
Monaco House Bristol Street Birmingham B5 7AS Telephone 021-622 2045 Telex 334237

(3126)

Applied Communications Inc., a US Corporation with offices located in key centres in the USA is a major Systems House specialising in on-line systems on Tandem Non-Stop Computers. ACI has installed more than fifty sophisticated switched networks, a significant proportion of which are in the Financial sector. The UK subsidiary has obtained several major new contracts in the areas of message switching and Financial applications which have enabled it to plan further expansion of its European operations. All of those systems are Tandem Non-Stop implementations.

ACI is seeking to fill the following vacancies:

Analyst Programmers
£11,000-£14,000

Applicants should have 4-8 years programming and Design experience in two or more of the following areas:
- Interactive Transaction Processing
- Database Systems
- Retail Banking Systems

Systems Programmers
£11,000-£14,000

Qualifications required are 2-6 years in Systems Programming in one or more of the following areas:
- Interactive Transaction Processing
- Message Switching Systems
- Communications Software
- Operating Systems Development
- Device Handler Development

Cobol Programmers
£9,000-£13,000

Experience of 2-6 years Cobol Programming in one or more of the following areas:
- On-line Transaction Processing Systems
- Interactive Database Application
- Finance/Banking Systems

Successful candidates will be working on the implementation of systems in the following areas:-
Electronic Funds Transfer Systems - Message Switching Systems - On-line Authorisation Systems - Reservations Systems - Videotext Services

ACI specialises in the definition, specification of requirements, system configuration, testing, installation and subsequent support of comprehensive software packages aimed at the Banking, Financial and Point of Sale markets as well as developing customised solutions to client requirements.

All appointments may involve travel to client sites which are usually within the area, although flexibility to work on specific assignments for extended periods away from home will be an important consideration. This could involve travel to the US or other worldwide destinations.

Excellent career development prospects exist in ACI, with promotion to Consultancy and Management position possible in the medium term.

To discuss your future career with Applied Communications, telephone Alan Moxon or Chris Peet on 01-423 2131. During out of office hours (evenings or weekends) telephone Alan Moxon 0582 873106 or Chris Peet 09322 22644 or write to:-

Manager, Customer Services, Applied Communications Ltd., 1-9 Peterborough Road, Harrow, Middlesex. HA1 2AZ.

ACI applied communications
the company with the right connections

DALROTH

MICRO CONTRACTS HOLLAND

Project Leader
£400-£550 p.w.

To work on the implementation of a BASIC interpreter to run on an existing very successful games computer.
The Project Leader will have previous experience of implementing a BASIC interpreter (ideally microsoft) coupled with good knowledge of Z80 Assembler programming. Some hardware familiarity especially interfaces would be advantageous.

Games Designer/Programmer
c. £400 p.w. negotiable

To be involved in the creative design and programming of new video games to run on both the client's video games computer as well as a range of competitors' machines.
You should be creative and imaginative with previous assembler programming experience, ideally on Intel microprocessors, and should have a knowledge of computer graphics.

For further information, please contact Colin Meelan, day 01-493 2947 or evenings/weekends 0480 214493 quoting reference 9863.

DALROTH & PARTNERS, 4 HALF MOON STREET, LONDON W1

MICRO TRAINING CONSULTANTS

WEST LONDON **£10-£11K + CAR**

Our client, the UK operation of this leading microsoftware consultancy who specialises in financial packages, are seeking training consultants who can complement their 1983 expansion program.

The prospective candidates should come from a sales environment who can demonstrate experience in the following areas:
- Organise and conduct training courses for both in-house staff and on-site customers.
- Design course material and if possible demonstrations (part of your duties would involve promotions and marketing of their educational service to clients).
- Experience of ACCOUNTING and MICRO software systems.
- Any experience or working knowledge of WORD PROCESSING would be an added advantage.

You must be mature, self-motivated, bright and have an outgoing personality with good communicative skills.
An excellent remuneration package is offered including overseas travel, company car, bonus and BUPA.
For more information on the next career move you'll never regret, Ring SHIRLEY FRANCIS, quoting Ref: 6828.

Lloyd Chapman Associates
123, New Bond Street, London W1Y 0HR (01-499 7761)

SYSTEMS ANALYSTS **£10,000-£13,000**
Several INSURANCE COMPANIES in SURREY and CENTRAL LONDON are seeking Systems Analysts and one Business Analyst from insurance environments with at least two years' experience. Also Senior Analysts are required with four to five years' experience for an ICL installation in SURREY, any machine experience for LEEDS, and a HEWLETT PACKARD person for the WEST HOME COUNTIES.

PROGRAMMERS (COBOL or PL/1) **£8,000-£13,000**
Two years and upwards of COBOL programming experience is required for an ICL installation in SLOUGH, two senior people with DATABASE for HONEYWELL installations situated WEST OF LONDON and several IBM experts for CENTRAL LONDON. Also required are PL/1 Programmers for SURREY and KENT.

SYSTEMS PROGRAMMERS **£10,000-£13,000**
At least 18 months' experience of DOS/VSE on IBM machines is required for SURREY and S.E. LONDON. A CENTRAL LONDON position is available for TP development including SNA, VTAM and NCP.

SNR. PROJECT LEADER (DEFENCE) **£ EXCELLENT**
At least 10 years' design experience is required using MASCOT + CONTEXT, ideally with some CORAL 66, for real time defence applications. First six to nine months in Dorset and then at base in BERKSHIRE.

PROGRAMMERS (Not Applications) **£ Neg**
Graduates with upwards of 18 months' experience of small business systems on MICROS using ASSEMBLER are required for SURREY. Other micro languages also welcome.

SOFTWARE ENGINEERS **£8,000-£14,000**
Various grades of Software Engineers are required for engineering and defence applications in the Home Counties. Micro processor experience (esp. Intel with ASSEMBLER would be an added advantage.

Please telephone for further details and an application form:

AMES PERSONNEL
6 CHART WAY, REIGATE, SURREY, RH2 0NZ
TELEPHONE REIGATE (07372) 22219 or 22210 (3128)

ANALYST/PROGRAMMER
£18,000 to £20,000 tax free

A major Communications Systems organisation based in Riyadh, Saudi Arabia, wish to recruit an Analyst/Programmer with an IBM 34 mainframe on COBOL background. Financial systems applications with experience in modifying packaged software and the ability to manage a small EDP department on a day-to-day basis would be an advantage.

Additional benefits include free accommodation, 30 days' leave, car, medical, air fares, etc.

Interested applicants should forward a detailed résumé to Richard White, Wells Technical Services Group, 334 Euston Road, London, NW1 3BG. Telephone 01-388 2284. (3144)

PROGRAMMERS
DIRECT CONTRACTORS REQUIRED
Up to £450 p.w.

For well-established software house, in easy reach of central London. Must have at least three years' good COBOL experience on IBM with MVS or DOS/VSE. Top rates will be paid to those who can make an immediate contribution to our ever growing development requirements. Please send C.V., and state availability, to:

BOX 1253 (3137)

YEOVIL DISTRICT COUNCIL

Treasurer's Department

SYSTEMS ANALYST/ PROGRAMMER
S.O.1 £8,568-£9,231
(plus 10% shift enhancement)

This new post has arisen due to an increase in this Council's computing activities.

The Council operates an I.C.L. 2946 which drives a number of on-line terminals and systems and has a considerable forward development programme.

The successful candidate will join a small but energetic team and will be required primarily to assist in the development of new and revised systems. Two years' experience in RPG2/COBOL on-line programming is essential and knowledge of I.C.L. operating systems will be an advantage.

Situated in pleasant countryside, Yeovil is convenient to both Bristol and Exeter. Financial assistance towards relocation expenses up to £1,800 and housing accommodation will be available in approved cases.

Application forms and further details can be obtained from The Personnel and Management Services Officer, 81 Preston Road, Yeovil, Somerset, BA20 2DP. Tel: Yeovil (0935) 75272, ext. 33 or 86.

Closing date: 27th April 1983 (3149)

BOX NUMBERS

Box number replies should be addressed to:

Box Number .....

c/o Computer Weekly
Quadrant House, The Quadrant
Sutton, Surrey SM2 5AS

Programmers
to make an immediate contribution
N.W. England

With British Telecom's increasingly competitive stance in the marketplace, we are revising substantially many of the computing aspects of our business. We are now looking for specialists whose skills will make an immediate and valuable contribution to our operational effectiveness. We need a number of the following to join small teams working in Manchester, Liverpool, Preston, Lancaster and Blackburn.

IBM Systems Programmers
Up to £11,725

To maintain operating systems hardware, with particular responsibility for setting-up advanced operating systems including accounting data management, scheduling, storage management, security and input/output on a newly installed IBM 4300.

You should be aged 25-45 with at least 2 'A' levels (appropriate degree or equivalent preferred), and should have 2 years' experience in IBM operating systems, e.g. DOS/CICS, VM/CMS; Micro Operating Systems (CPM/MPM), and Programming Languages (particularly PL/1).

Starting salary will be within the range £7,498 – £11,725, depending on age, qualifications and experience, rising to a maximum of £13,926.

Applications Programmers
Up to £8,603

To develop end-user software for non-engineering systems. Aged 20-45, you will need, as well as 'A' levels, at least 2 years' experience in basic computing skills which should include programming (PL/1, MBASIC and COBOL); database utilisation particularly RAMIS; and the use of packages available as programming aids.

Starting salary will be within the range £5,046 – £8,603, rising to a maximum of £11,725.

For further information and an application form, ask the Operator for FREEFONE 6014, or write to Mrs J. McCallin, Personnel Officer, P1242, British Telecom, 91 London Road, Manchester M60 1HQ.

British TELECOM

(3148)

Can you persuade DP Management to see VME your way?

We are looking for a Consultant Lecturer with VME 2900 or VME B field implementation experience, who has the maturity and technical awareness to present courses to high level Data Processing Management, often in a pre-sales situation, and who will be able to take total responsibility for the support of courses in the vital area of training for DP Management of VME operating systems.

You would be a member of the Large Systems Implementation Unit of ICL's Professional and Executive Training Sector, based at Beaumont, our Berkshire training centre near Windsor.

Although based mainly at Beaumont, you will be presenting courses at Hedsor Park, ICL's prestigious management training centre near Maidenhead, and at customer locations throughout the UK and overseas.

The Large Systems Implementation Unit is also responsible for providing both potential and existing users with training on the use of our networked product line and you would be expected to contribute to and become involved in this fast moving and interesting area.

As customers move to VME this prestigious area of training offers great challenge, satisfaction and career prospects.

We will train you in professional presentation techniques. If you have got the confidence, credibility and enthusiasm to communicate your experience of VME to others, telephone Angela Haggarth, Manager-Large Systems Implementation Unit or Michele Barrons, Personnel Officer on Windsor (07535) 68181 or write to them at International Computers Limited, Beaumont, Old Windsor, Berks SL4 2JP.

ICL International Computers

Sales/Support
— Exciting New Venture —

Backed by one of the World's leading electronics organisations, our client is poised to launch a new generation of small business systems with excellent networking capabilities.

The initial business plan is based on the selection of first-class distribution outlets and software sources which has lead to their urgent requirement for the following key personnel.

SALES EXECUTIVE — c £20K + Car + Benefits

Requiring a highly successful track record with one of the major small business system manufacturers or dealers, your sales experience must be augmented by a fair understanding of accounting systems, stock control or similar applications. The role will involve the sourcing, selection and account management of regional distributors and software/systems houses throughout the UK. A sound knowledge of at least one vertical market would be advantageous.

SOFTWARE SUPPORT — c £15K + Car + Benefits

With at least five years experience in the computer industry, your experience must cover operating systems (Unix preferred) and applications software. You will use this expertise fully in liaising with software houses and customers for the provision of a high level of pre-sales technical support. Experience of training sales engineers would be useful.

For full details of this exciting new venture please telephone Ken Allwright on Maidenhead (0628) 74274 or write in confidence to Charvil Lewis International, 27 Marlow Road, Maidenhead, Berkshire.

Charvil Lewis INTERNATIONAL

Logistix

Logistix Recruitment Limited
10 Grenville Place, London SW7 4RW

Telephone 01-373 3063

Signal Processing
London & S. Home Counties: Salaries to £12K

Our Client, one of the leading U.K. Systems and Software Houses, has a number of vacancies for Signal Processing Specialists to join either its Central London- or Surrey-based offices. Applicants should be graduates in a scientific discipline and have subsequently gained at least two years' experience, in an industrial environment, developing software for signal processing applications. It will be of considerable advantage to have had exposure to High Speed Array Processors with speeds of up to 100M floating point operations per second. As well as possessing the technical skills outlined above successful candidates will also be expected to be personally presentable as there is a significant degree of client contact.
Ref: L/14/A

Comms Consultants
Italy: Salaries to £17K + Overseas Allowance

An International Systems House and Consultancy urgently requires Communications Consultants and Senior Communications Consultants for permanent career positions in Italy. Suitable candidates should be 26-36 years and be educated to degree standard. You will be expected to have a thorough knowledge of at least two of the following:- message or packet switching, communications protocolling techniques (X-25, SDLC, HDLC) or office automation and networking systems. Experience within the banking industry would be a distinct advantage, particularly for the senior positions. Fluency in Italian is not essential as English is predominantly spoken within the working environment.
Ref: L/14/B

Knowledge Engineering Language Development
Thames Valley: Salaries to £15K

PROFILE: SPL International established its Research Centre in 1978 in Abingdon, Oxfordshire and has recently taken additional premises in the Reading area. The Centre plays a significant role in the application of artificial intelligence techniques to industry's requirements and, additionally, is in the forefront of compiler technology for such languages as CHILL, ADA and RTL/2.
PERSONNEL: As part of its planned expansion, the Research Centre is seeking Systems Programmers, Designers and Consultants.
All candidates, preferably aged 23-35 years must hold a minimum of B.Sc. degree in a numerate subject and offer relevant experience of at least 12 months. Candidates with an M.Sc. or Ph.D. are encouraged to apply if they can combine an academic background with some industrial and commercial exposure. The Company's specialist areas of activity demand that all potential employees have an in-depth knowledge gained as a Programmer or Systems Engineer of two or more of the following:- artificial intelligence, cybernetics, knowledge engineering, robotics, process and control engineering, the development and optimisation of compilers for CHILL, ADA, PROLOG or other high level languages.
GENERAL: Certain positions will entail a degree of national and European travel and all candidates must be prepared to contemplate travel as a necessary job requirement. Salaries reflect the importance which S.P.L. places on the recruitment of these personnel. Local housing costs are comparatively modest, whilst the Company will meet significant relocation costs. In addition, a comprehensive range of ancillary benefits is available. Interviews will be held on the Company's premises throughout April.
Ref: L/14/C

Office Automation Systems
London & W. Home Counties: Salaries to £12K

Applications are invited from Systems Designers who wish to enter the fast-moving market of Office Automation and Viewdata Systems. Our clients are one of the leading names in this area and their newly established Research and Development facility has a number of vacancies in the following technical fields: data and telecommunications; systems software design; I/O drivers design; screen editor design and terminal emulation. Whilst it would be advantageous to have gained experience in any of the above, our clients are primarily concerned with general, real-time systems exposure preferably gained on DEC PDP-11 or Modecomp mini-computers. Language skills should include fluency in Fortran, Assembler and a high-level, block structured language such as Pascal.
Ref: L/14/D

Operational Analysts
London: Salary to £13.5K

A number of Operational Analysts are required by this London-based Consultancy. Academically, you should hold at least a first- or second-class B.Sc. Degree in Mathematics, Physics or Statistics. An M.Sc. or Ph.D. in Operational Research is a distinct advantage and will certainly reflect in the salary offered. Past work experience should include one or more of the following areas:- war gaming and scenario studies, mathematical programming and analytical modelling, navigation systems assessments, reliability studies and data reduction. An important feature of these positions is the ability to communicate software and O.R. techniques to non-technically minded personnel. There will also be a degree of travel to clients' sites.
Ref: L/14/E

Networking Systems
Thames Valley: Salaries to £14K

A small Systems and Software House, specialising in the development of networking products for the Banking and Defence industries, is currently seeking to recruit additional Junior Programmers and Senior Designers. Suitable candidates will be numerate graduates who have current or very recent experience in a multi-process or environment. It is essential that you offer fluency in a block-structured language with 'C' or PASCAL being the most desirable. Applicants who have software and/or systems design experience with a proprietary networking product such as SNA or DECNET will be of particular interest. However, recent graduates who demonstrate ability and enthusiasm will be offered excellent in-house training. A degree of mobility is essential as there will be short-term visits to E.E.C. countries.
Ref: L/14/F

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Our vacancies stay sharp to the bottom of the page.

FREELANCE OPPORTUNITIES

SOUTHERN
0252 516141

ADF Programmers
BURROUGHS 6800/6700 Analyst/Progrommars
CIS COBOL Programmere
CORAL 66 Progrommors
DATAPOINT Datashare Datsbus Programmer/Analyst
DEC RSTS/E BASIC + 2
DEC RSX CORAL Assembler
DG RDOS Business Basic Programmers
Hardware/Software Engineers
Honeywell OPS4 RPG II
HP3000 IMAGE COBOL DUIZ, QUICK
IBM Assembler with PL/1 Analyst/Programmers
IBM DDS VSE CICS Chief Programmer
IBM DATABASE Administrator with IMS DB/DC
IBM SYSTEM Programmers
IBM 8100 DPCX or DPPX
IBM PL/1, IMS DB/DC
IBM DS COBOL Programmers
IBM COBOL with IMS DB/DC, some with ADF
IBM COBOL CICS/OL1, JSP
IBM DL1 COPICS CICS
IBM MANTIS Programmers
IBM NOMAD
IBM PL/1 CICS OL1
IBM Series 1 RPS, MTM
IBM SYSTEM 38 RPG III
IBM DATA MANAGER EXPERIENCE
ICL IDMS Systems Prog./Designer
ICL DDS Analyst
ICL LISP Programmers
ICL CORAL and COBOL Programmer/Analysts
ICL COMMS Programmers with PROTOCOL experience
ICL COBOL with TPMS or MTS
ICL ME29 TME RANGE COBOL
ICL SYSTEM 25 Designer and Programmers
ICL VMEB Analysts with IDMS
ICL VMEB COBOL Programmers, some with IDMS
ICL 2900 VME Technicel Support, all levels
ICL 2900 with TOTAL
ICL DMAC 29 IDMS
INTEL 8086 Programmers
INTERGRAPH AND GRAPHICS
JCL Manager Expertise
MICHAEL JACKSON structured programming techniques with COBOL
MICRO BASIC Programmers
TANDEM Programmers
Technical Author with DEC ASSEMBLER
Telecome Consultant
T1990 DX10 COBOL Programmers
UNIPAY Programmers
VAX, BASIC, COBOL or FORTRAN
VAX VMS CORAL 66 and INTEL 8086
VAX SYSTEL expertise

Contact: STEVE WHITING, STEVE CASEY, PETER HOLLIDAY, CHRIS WHETHERLEY, DAVE LONKHURST, DEREK WADHAM, SANDRA CAREY or EILEEN CARMICHAEL

MIDLANDS & NORTH
021-742 4431

DEC PDP RSX CORAL
HP3000 IMAGE VIEW QUERY RAPID
IBM/ICL COBOL plus DB, all levels
IBM 8100 DPPX
IBM Assembler CICS Programmers
IBM IMS DB/DC
IBM COBOL CICS DL1 Programmers
IBM DOS/VSE Systems Programmer
ICL VMEB IOMS and/or TPMS
ICL VME 2900 Programmers
CIS COBOL Programmers
ICL ME29 TME Programmers
ICL DRS 20, all levels
UNIVAC OMS 1100 Technicians
IBM PL/1 CICS OL1 Programmers
Manufacturing Analysts with Mainframe or Mini experience
PERMANENT Senior Operators with MVS, c. £9K, for Birmingham
UNIVAC 1100 Database Administrators
UNIVAC 1100 Analysts/Programmers

Contact: NEIL SMITH, DAVE PARKER or KAREN LONGCROFT

OPERATORS
0252 516141

ICL VMEB or GII Shift Leader
ICL GII and VMEB Operators
ICL 2904 Executive Operators
ICL VMEB Network Operator
HONEYWELL L6, OPS6 Operators
IBM 8100 DOS/F Operators
IBM 4341 OS/MVS, JES 2, TSO with good JCL
PERMANENT Operators with IBM 4341 OS/VSI and MVS JES 3 for Middlesex
PERMANENT IBM Data Controller for MVS env. with good JCL, Herts.

Contact: ALAN PAINE or CHRIS MAGEE

OVERSEAS
0252 516141

SAUDI ARABIA

Contact: BILL EVANS

12 months' + assignments April, May, June
Analysts with IMS and commercial systems experience
Analyst/Programmers — PL/1 preferably with COBOL, TSO, SPF, MVS experience
Programmers — Mark IV, AOF, APL, SAS or FOCUS experience
Systems Programmers — IMS DB/DC, VTAM, MCP, MSNF or HSM, MSS 3580 and DASD management experience

HOLLAND

Contact: BILL EVANS or BILL TORBITT

6 months'+ assignments commencing April, May
Programmer/Analysts — APL-MABRA experience
Programmer/Analysts — IBM 8100 experience

USA

Urgent requirements for Programmers in Chicago, Philadelphia, Baltimore; excellent package
Expertise required
IBM COBOL with IMS or DL1
IBM COBOL CICS/OL1
IBM COBOL with PL/1
IBM System 38 with RPG III
IBM 8100 DPPX COBOL
ICL or IBM COBOL with IOMS
IBM COBOL with Adabas
IBM COBOL with any on-line or Database experience

Experience of other mainframes/languages are also in demand in America. If you are genuinely interested in a contract in the USA contact: STEVE WHITING

PERMANENT
0252 516141

Programmer/Analyst with mini COBOL and experience of software tools, Surrey, c. £8.5K
Analyst/Programmers with strong COBOL for Middx., c. £12K
Project Leader-Senior Analyst/Programmer with COBOL and accounting systems experience, Berks., to £12K
Senior Programmers and Programmers with ICL COBOL, preferably with VME experience, Herts., c. £9.5K
Operations Manager with IBM 9SO background, Surrey, c. £9.5K

Contact: PETER JEZEPH or FREO BRAMLEY for an immediate confidential interview or write, enclosing a detailed c.v.

(3127)

TRIDENT COMPUTER SERVICES

WE CARE FOR OUR CONTRACTORS

THE PARADE,
HIGH STREET,
FRIMLEY, SURREY
Tel: 0276 64252. Telex: 858386

2115 COVENTRY ROAD,
SHELDON,
BIRMINGHAM B26 1BR
Tel: 021-742 4431. Telex: 336879

MEMBER

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Not since the days of Florence Nightingale has the Nursing profession undergone such a change.....

UKCC
UNITED KINGDOM CENTRAL COUNCIL for Nursing, Midwifery and Health Visiting

After more than a century of development and change, nursing, midwifery and health visits are joining together to form new statutory bodies with responsibility for one of the largest professions in the UK.

With the creation of a United Kingdom Central Council and the National Boards of England, Scotland, Wales and Northern Ireland, comes a major new information processing project to replace systems currently in use for keeping professional records for individuals. Computerisation will also be utilised for the statutory bodies in the areas of financial information, statistical analysis and central processing of applications for training places.

Computing power is considerable, the hardware utilised will be an IBM 3083B (16 megabyte) and a NAS 240H (8 megabyte). The software environment is MVS operating under VM and COBOL is the main language. Adabas provides the database management software and NATURAL is also used. The database is on-line using the COM-PLETE TP monitor via VDU's from the four national capitals.

SENIOR SYSTEMS ANALYSTS to 14K

The Senior Analyst position is critical in terms of defining and quantifying requirements identified by the Senior computing management. He or she will be able to demonstrate proven ability in project control and man-management. It would also be of considerable importance to have some fundamental programming knowledge or experience and to be able to communicate and present ideas and technical information effectively in user areas. The person will be expected to control, manage and motivate more junior systems staff particularly analyst programmers within the database environment, and play an active role in data policy and deputise for the Database Administrator where appropriate.

This permanent position offers an ideal opportunity for unique experience because the project is in its early stages, and will be one of the largest ever undertaken in this field. We would also consider employing a professional for this role on a contract basis for the duration of the development stage (12-15 months).

ASSISTANT DATABASE ADMINISTRATOR to 10K

This is an excellent opportunity to use your database skills within this new division, and gain valuable experience in all areas of database management.

A background of three years or more in data processing is essential, preferably from a programming environment, with practical knowledge of database theory. Good communicative skills coupled with the ability to deal with all levels of management and users, is of prime importance. A degree or education to degree level is a definite advantage.

The successful candidate will hold a responsible position within this highly professional team and assist the D.B.A. in all areas to build and validate logical data models to specific requirements.

To discuss these positions in more detail, please telephone Janet Chilvers on **01-734 7394** during working hours or on **01-359 4997** evenings and weekends.

WARWICK WOODWARD
A SPAN GROUP COMPANY
43-44 GREAT WINDMILL STREET, LONDON W1V 7PA
TELEPHONE: 01-734 7394 24 HOUR ANSWERPHONE

SYSTEMS ANALYST/PROGRAMMER

COMMERCIAL SYSTEMS PROJECT DESIGN AND DEVELOPMENT IN DUBAI, U.A.E.

One of the largest and most successful trading groups in the United Arab Emirates is looking for an experienced Systems Analyst whose main tasks will be:

1) Modify existing accounting procedures and reports to smooth the computerisation process.
2) To communicate with clients and suppliers on one side and Company Management on the other.
3) Helping systems design, development and implementation.
4) Helping trading company personnel to appreciate computer usage and benefits.

This is a Key Job carrying considerable responsibility for System Development and Project Leadership.
Ideally a degree + four years' minimum experience in Programming, Systems Analysis and Data Processing within a commercial environment and good communication ability, would be needed. Arabic knowledge is essential.
Also needed two Programmer/Analysts with three years' minimum experience for the same project. Arabic knowledge is not essential.
Salary will be negotiable depending on experience and background and will include accommodation and a car.

Please contact or send full C.V. for the attention:
Miss J. Slater
STEMMOS LTD,
344 Kensington High Street W14

(3180)

The POLYTECHNIC WOLVERHAMPTON

Senior Analyst/ Programmer (User Services)

Co-ordination of user services for staff, students and administration, including information, documentation and program advisory service, combined with involvement in current programming projects. Hardware currently includes 4 large PRIME computers and 45+ CP/M micros.

Salary Scale: SO2-PO1a (34-38)
£9,504-£10,563

Further particulars and application form from:
Establishment Clerk,
The Polytechnic, Wolverhampton, WV1 1SB

(3168)

UNIVERSITY OF WARWICK

LECTURESHIP IN INFORMATION SYSTEMS/BUSINESS COMPUTERS

Applications are invited for a post of Lecturer in Information Systems/Business Computers in the School of Industrial and Business Studies.

The successful candidate will teach on undergraduate and postgraduate courses, designed for future managers and staff advisors so as to enable them to understand and benefit from modern computer developments relating to information and decision support systems. Candidates should have research experience as well as an understanding of the problems of obtaining effective use of computers within organisations. Initial salary up to £9,610 p.a. on the Lecturer scale: £6,375-£13,505 p.a.

Application forms and further particulars may be obtained from the Academic Registrar, University of Warwick, Coventry CV4 7AL quoting Ref. No: 35/A/83/26. Closing date for receipt of applications is 28th April 1983.

(3140)

INTER-COM

SNR. ANALYST PROGRAMMER — **£12,500 + Benefits**
Major profitable UK concern with superb offices in the heart of SURREY currently seek two IBM Cobol Analyst Programmers with experience of VTAM, IDMS, CICS TSO/SPF. First class communicative skills are needed as well as exp. team leadership. Excellent benefits include Annual Bonus.

PLI DEVELOPMENT — **c. £11,050**
Leading London based company has urgent requirements for Senior Programmers who will ideally have three years' commercial programming exp. using PLI/+ online and database techniques. Company retain IBM 3033, 4341 x2 running under MVS using CICS DL1, IMS. Call now for more details.

JUNIOR COBOL — **To £8,500**
18 months' Cobol programming experience plus a genuine desire to progress eventually into Analysis is all that's needed to join the existing development team within this commercial organisation based Middx/Surrey borders. Company retain IBM hardware + mainframe. Excellent benefits.

IBM BANKING — **SOUTH WEST**
Major Banking Group requires IBM Cobol or PL1 programmers/analysts with experience of IMS DB/DC. Jackson structured programming techniques. Assembler advantageous. Salary £9,200-£10,500. Systems Analysts, financial systems preferred + working on International Banking Projects. Salary £12,000-£14,000. All positions offer normal banking benefits including mortgage.

JUNIOR SYSTEMS ANALYSTS — **c. £10,000**
Due to continued expansion a number of our London based clients seek Systems Analysts, minimum one year's experience. Programming background needed along with excellent communicative skills as there is considerable user contact. Develop new projects from feasibility to implementation. Exp. of an on-line/Database environment definite advantage. Excellent benefits normally associated with large companies.

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TELEPHONE: 01-735 8171. TELEX 295585 LSP G

(3122)

Agy No. GE 7012

CALL 735 8171 Ext. 137 or 145 — Suite 6, South Bank House, Black Prince Rd, London SE1

D.P. OPPORTUNITES UP TO £9,000 – LEEDS

Major development of existing D.P. facility

We are the fourth largest Building Society with a large and well established D.P. department based at our Leeds Head Office. The Society has a major investment in on-line systems both within Head Office departments and for its branch network where there is an active programme to introduce counter-top terminals. These systems are supported by two IBM 3031 CPU's running under the MVS operating system with CICS.

An ambitious development programme has been identified for the next five years in order to provide the Society with advanced marketing and management information systems. In order to support this programme several new software components and techniques are being introduced including database and Very High Level Languages.

To help the Society with these developments we require:

PROGRAMMERS AND ANALYST/PROGRAMMERS

We are looking for D.P. professionals with a good IBM background and substantial experience of Cobol. Knowledge of Assembler will be useful. It is doubtful whether someone with less than 3 years industrial/commercial D.P. experience will meet our requirements.

BENEFITS

With the wide range of design and development projects that are currently underway and planned for the future we can offer excellent scope for career progression, with a unique opportunity to be involved in the design of advanced systems.

Salaries are progressive and competitive. Additionally, the Society offers a STAFF MORTGAGE SCHEME, pension, life assurance and other benefits.

Interested applicants should telephone Leeds 438181, Ext. 2373 for an application form and vacancy specification quoting reference number C.W. 7/4 or write to:

Mr. J. Clark MBIM,
Personnel Manager,
Leeds Permanent Building Society, Permanent House,
The Headrow, Leeds LS1 1NS.

Closing date for applications is: 22nd April 1983.

Enquiries will be treated in the strictest confidence. Envelopes should be marked 'Staff-Confidential'.

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you can see the wood for the trees

Waltham Forest
an equal opportunity employer

5 COBOL PROGRAMMERS

to £8,000 + benefits

This progressive London Borough

comprising Walthamstow, Leyton and Chingford areas is situated in the North-East of London and borders Epping Forest. The area is predominantly residential with belts of industry interspersed. There are excellent facilities for shopping, recreation and education. The borough is well serviced by public transport, and Walthamstow Central Station is the Northern Terminus for the Victoria Line.

Live locally – the rates are going down this year – or commute from a village or small town in the nearby Essex countryside. Free car parking for employees is provided.

The Data Processing Department use a 4 mb 2956 with VME and TPMS. Systems development and integration are achieved by extensive use of DDS and IDMS. Committed terminal users, they have both 7500 and DRS screens and a sophisticated Rediffusion key-to-disk system. The role to be played by distributed and networked micros in future developments will be extensive.

The Systems Development Manager is looking for five additional programmers to join his highly professional team. He wants 'self-starters' who are happy to use their initiative and do not need constant supervision.

The Job

offers excellent training and career opportunities for those who wish to consolidate their position in a professional environment where individuals matter. Successful candidates will be required to construct, develop, document, test and implement computer programs which provide the processing facilities defined in relevant specifications. Programmers are assigned to Project Teams which are managed by a Principal Systems Analyst and supported by Senior Programmers advising on technical and design considerations.

The Candidates

will be professional, highly-motivated people who enjoy working in a progressive Data Processing environment where job satisfaction and career progression of the individual are given high priority. Sound ICL COBOL experience and an understanding of structured programming techniques is essential. A knowledge of Jackson Methodology would be advantageous, and candidates combining this with practical experience of DDS/IDMS programming in a VME environment will be of particular interest.

Find out more

Contact us quoting Ref. LB1R for comprehensive job specification, benefits package, application form, or any additional information you require.

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77 Wellesley Road, Croydon CR0 2AJ
01-681 7748/2141

[3603]

An ethical service from practising computing consultants

SALES and SUPPORT

BIRMINGHAM/MANCHESTER DEC based systems

Our Client is one of the largest and the most consistently successful computer services companies with an unequalled reputation for quality, innovation and growth. Their products and services cover almost every aspect of computing and information technology. The large customer base which includes industrial, financial, government, education and professional organisations has been built on the concept of providing solutions to business problems and is supported from offices in the UK and several overseas locations including the USA. In order to satisfy the company's next phase of expansion we have been retained to recruit professional sales and support personnel for their Northern region. These positions offer tremendous potential and carry all the normal benefits associated with a multi-national company.

TURNKEY SALES EXEC.

B'ham/M'chester **Sal.Neg. G'tee to £18K**

You will probably be in your early thirties, with a sensible mix of sales and systems experience. Knowledge of DEC hardware and software is essential. IBM and/or ICL appreciation would be an advantage. This position requires an ability to develop proposals for business solutions and to sell these proposals to senior management, backed by a team of experienced professionals. The successful candidate will already have a good track record in sales and must be a self-starter. There is a choice of car and the successful candidate can expect to earn in excess of £25K per annum.

TECHNICAL SUPPORT (VAX/PDP)

B'ham **c £10-13K**

The successful candidate will be a well qualified software professional with at least 3 years' experience of RSTS and VMS and/or RSX together with sound telecomms and networking knowledge. He/She should be self motivated, possess excellent communicative skills and be used to operating in both the pre-sales and implementation areas. The highly attractive salary is backed by a valuable range of benefits and the prospects within the organisation are outstanding.

Please send full CV to:
Vic Chivers,
SEARCH DYNAMICS LIMITED
Edgbaston House, 3 Duchess Place,
Hagley Road, **BIRMINGHAM B16 8NH**
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intercity consultants

DIRECTORSHIP/CONTRACT SALES

We are a rapidly expanding computer consultancy specialising in systems and programming contract support to client companies.

As an overall part of our business plan we are now seeking an experienced consultant with proven success in the London and Home Counties area.

The person that we are seeking will be able to demonstrate the following qualities.

- ★ Total commitment and tenacity.
- ★ Strong communication and interpersonal skills.
- ★ Ability to work as part of a team.

Individuals who can meet this specification can expect substantial profit related earnings and will be expected to take a shareholding in the Company.

Replies to be addressed to:

The Managing Director (London Office).

CONTRACTS

A selection of our existing contract requirements are listed below. Many are ideal for 'first-time' contractors, offering long periods of employment and high rates of pay.

MINIS

HP 1000 - Fortran OR Pascal	-	Scotland
HP 3000 - Fortran - Graphics	-	Scotland
HP 3000 - Cobol, Image, View, Query	-	Scotland, NW & H. Counties
PDP - VAX VMS Systems Programmer	-	Berks
PDP - VAX 11780 - Cobol	-	H. Counties
PDP - Alms	-	London
R/T - Coral66 - Defence	-	H. Counties, NW
Ferranti Argus - Coral	-	H. Counties, NW
IBM 8100 - Cobol - Qppx	-	London
ICL ME29 : Cobol - Idms/Tpms	-	H. Counties, NE
Systems Engineers - Defence Systems	-	H. Counties, NE
Systems Engineers - TTL Logic	-	London

MAINFRAMES

ICL 2900 - Cobol - Idms	-	H. Counties, NE, NW
ICL 2900 - Idms - Assyst	-	H. Counties, NE, NW
ICL 2900 - Cobol - Idms/Tpms	-	Berks
IBM - Cobol - Cics and/or DL1	-	H. Counties, NE, NW
IBM - Ims - Adf - Systems Designers	-	London
IBM - Fortran - Vm/cms	-	NW
IBM - Natural - Adabase	-	NE
Burroughs 6800 - Cobol - Dms2	-	H. Counties

For further information please telephone our London office or return our coupon or your C.V. to: Intercity Consultants, FREEPOST, World Trade Centre, London E1 9BR.

I am interested in contract work

Name:
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Works Tel:
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Hardware:
Software:

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UNIX

— In Consultancy

£8,000—£15,000 **Central London**

Developed originally in 1969 as a research tool, UNIX is poised to become one of the most popular and widely implemented operating systems in existence. Designed as a multi-user/multi-tasking system, its main attraction is a high degree of portability enabling implementation on a wide variety of microprocessors and consequently on the majority of today's 16 and 32 bit hardware. In short UNIX is destined to make the greatest impact on computer-software technology for years.

— in commerce
— in industry
— in CAD/CAM
— in manufacturing
— in finance

INEVITABLE

As Europe's leading supplier of UNIX related products, we have formed a highly skilled team of Software Specialists enabling us to capitalise on the rapidly expanding Commercial, Industrial and Office Automation markets. Our success has created a number of opportunities for Systems Programmers and Software Engineers with operating system or microprocessor development experience to join our team.

Whatever your knowledge, involvement or indeed interest in UNIX, this environment will accommodate your short, medium and long term technical career ambitions. If you want to become involved in the evolution of a product that has already captured the attention and imagination of computer manufacturers and users throughout the world, then we would like to talk with you.

To find out more and to arrange an initial interview please contact our Advising Consultant **Steve Stark** on **01 935 0671** (24 hour answering service). Alternatively submit a copy of your C.V. to him at the London address below.

(3151)

Technical Sales & Management Appointments

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Specialist Computer Recruitment Ltd

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021-236 3781

NORTH
International House, 84 Deansgate, Manchester M3 2ER
061-833 0427

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Avenue Louise 327, Boite 4, 1050 Bruxelles
010 322-640 7151/71

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Willemsparkweg 92, 1071 H.M. Amsterdam
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Top calibre Analysts & Programmers

West London — Up to £12K + bonus

Our client, one of the fastest growing multinationals in the FORTUNE list of the top 500 companies, is a minicomputer manufacturer with a public commitment to continuing expansion which includes the provision of top quality turnkey services. To this end an independent systems division has been set-up in the UK with European wide responsibilities to offer systems design, special purpose software, systems integration and other services to large corporations across a wide variety of commercial and technical applications.

Several more top flight analysts and programmers are required. A good working knowledge of COBOL, PL1 or Fortran is essential together with hands on experience of Transaction Processing systems or Real Time applications.

The ability to write program specifications will certainly be of interest and candidates for the more senior appointments must be able to demonstrate relevant systems design skills on commercial and/or technical applications.

These positions offer one of the most attractive working environments in the industry including:-

- The opportunity to extend experience into completely new application areas.
- Positive encouragement to get hands on experience across the product range from micros to £1,000,000 super minis.
- A chance to acquire knowledge of new languages, operating systems and support aids.
- Outstanding opportunities for personal growth, particularly into project management.

The highly competitive remuneration package is complimented by a company car for the more senior appointments and will be earned by more junior staff, on promotion.

In the first instance contact Chris Denington on 01-631 4184 or write to: A & A Consultants (Holding) Ltd., County House, 10 Little Portland Street, London W1N 5DF.

A&A

(3130)

LWCR

London West Computer Recruitment

DP Manager
Wiltshire — to £25K

A manufacturing company, part of a large multi-national group requires a manager with a strong IBM mainframe background and relevant applications experience. Personal qualities of poise, thrust and corporate understanding are looked for. Age: 30 to early 40s. Substantial benefits. Ref 631

Analysts
West Midlands — to £10.5K

Manufacturing and distribution company needs analysts to help develop systems on large ICL mainframe with nation-wide mini/micro network. ICL background essential. Manufacturing/wholesaling expertise is required. Knowledge of micros desirable. A programming background useful. Excellent benefits. Ref 659

IBM Programmers, A/Progs
Midlands, South, West — £8.5–13.5K

Vacancies exist in IBM installations with manufacturing and financial services organisations at various levels of seniority. Cobol or PL1 experience should ideally be combined with at least one of CICS, DL1, Adabas, IDMS. Re-location assistance in most cases. Ref 117

HP — Permanent/Contract
South, West, Wales — £ negotiable

Manufacturing, distribution and engineering companies require experienced Hewlett-Packard programmers and analyst programmers at varying levels of seniority. A minimum one year's experience of HP systems software is required. More senior positions call for hardware/software communications knowledge. Excellent permanent and contract opportunities. Ref 670

Write or telephone:
London West Computer Recruitment
Evergreen, Dauntsey, Chippenham, Wiltshire SN15 4JA
Telephone: (0249) 891114

IBM — Software Technicians
Herts — £20K+

Senior technical specialists are required by well-established software product company developing and selling products to the IBM market. Required is in-depth knowledge of MVS and systems software including CICS and/or IMS, plus capacity planning, tuning and Performance Analysis experience. Ref 663

IBM Systems Programmers
Midlands, South, West — to £15K+

Systems programmers with at least one year's experience are required by OS VS, MVS and DOS/VSE installations on the South Coast and at provincial centres in the Midlands and West Country. Environments include manufacturing, financial services, public utility and computer bureau operations. Ref 671

ICL Systems Programmers
Midlands, West, Wales — £ negotiable

ICL VME or George III systems programmers and ME29 technical support staff are required by several organisations including public utilities, distribution companies and service organisations. IDMS and ICL tele-processing software experience will be advantageous. Ref 672

ICL Programmers, Designers
Midlands — to £11K

Large distribution company requires staff at varying seniority levels to help develop systems on ICL ME29 machines. IDMS and TP knowledge essential for senior positions. A minimum six months of Cobol experience required for programming posts. Good prospects. Re-location assistance. Ref 669

Hardware Designers
Oxon, Wilts, London — £ negotiable

Design engineers at all levels required by companies building micro-based products. Applications include networking, data communication control and office automation systems. Degree standard candidates with digital (and, preferably analogue) electronics knowledge should have experience in real time, process control or office d.p. systems development. Ref 673

Real Time Project Leaders
Wilts, Glos — to £14K

Leading companies engaged in telecommunication product development, process control applications, and flight control systems development require team leaders of degree standard with low and high level real time language skills. Experience of DEC and Intel machines desirable. Attractive locations. Re-location assistance. Ref 613

Real Time Programmers
Wilts, Glos — to £10.5K

Several large companies are seeking degree standard programmers with 2-3 years' experience. Familiarity with a real time high level language essential; knowledge of DEC and Intel machines desirable. Attractive locations. Excellent prospects. Re-location assistance. Ref 614

Real Time Programmers
Hants — to £12K

Well-established systems house requires experienced real time programmers for work on government and defence projects. Knowledge of Coral 66 is essential. Candidates, preferably of degree status, should have minimum two years of recent relevant experience. Excellent prospects. Ref 666

ring SCOPE for a change....

PL/1 or ASSEMBLER PROGRAMMERS — to £10,500 + Mortgage

City Essex
The high demand recently encountered for good PL/1 or ASSEMBLER programmers continues. For example, at the time of going to press we have 6 companies in Essex and the City who have asked us to recruit programmers for them with either PL/1 or ASSEMBLER experience. All 6 are major companies with offices set in rural surroundings or close to main line terminii and offering important benefits such as mortgage subsidy and flexitime. To learn more about these opportunities contact us today.

ICL ANALYST/PROGRAMMER — to £11,000 + Mortgage

City
We have been requested by a leading company, based in the City to find an Analyst/Programmer for them. The necessary qualifications are upwards of two years COBOL experience, preferably on ICL equipment, although other mainframe experience will be considered. The work is interesting involving close user contact, and the benefits, in addition to a realistic salary, include first class sports and social facilities, subsidised restaurant, and mortgage assistance where appropriate.

ICL PROG/ANALYSTS — to £10,250

Sussex/Kent/Surrey.
Recently, five more companies have registered vacancies with us for programmers with upwards of 18 months COBOL experience. The companies utilise either ICL mainframes or ME29's and offer good conditions of employment including on-going training. If you feel that your career is not being developed sufficiently, then we could well have the company who can offer you every encouragement to progress further.

SCOPE FOR ALL COMPUTER PERSONNEL .....

Above are just a small selection of current opportunities but this is only part of the picture—for we currently have on file vacancies covering the whole of the Home Counties and London, so no matter where you live, contact SCOPE for news of the plum positions, quoting Ref: DL67G.

RPG2 or RPG3 PROG/ANALYSTS — to £11,500 + benefits

West London
An excellent opportunity occurs for a programmer with good RPG experience to join an international household name company based in West London. With the installation of an IBM System 38 and future expansion plans, the successful applicant can considerably advance their career prospects. As well as a good salary, the fringe benefits offered make this a job not to be missed.

HONEYWELL ANAL/PROGS — to £10,500

West London/Middlesex
We have been retained by several companies in West London and Middlesex to find professional Honeywell analyst/programmers looking to expand their experience. The minimum requirement is for eighteen months COBOL gained on level 65 or level 6 hardware, although the vacancies are at varying levels and our clients would also be interested in people with considerably more experience. The excellent salaries offered together with fringe benefits make these extremely attractive positions.

IBM COBOL PROG WITH CICS OR DL/1 — to £11,000

Sussex
A brand new installation, utilising IBM 4300 hardware has just been set up in a pleasant Sussex town. The datacentre will be providing services to a wide range of companies within our clients group. Consequently, the work will be both interesting and varied, and will make extensive use of CICS and DL/1. If you have upwards of two years IBM COBOL then this is the ideal move for you.

STOP PRESS
URGENT — IBM COBOL PROGS — to £10,800

Croydon
Just as we are going to press, a major Croydon client has rung SCOPE to inform us of four superb openings for IBM COBOL programmers. If you have any IBM COBOL experience, just ring the number below or better still, why not pop in and see us during your lunch hour — we look forward to talking to you.

SCOPE

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19 Park Street,
Croydon. CR0 1YD.

01-680 5920

SYSTEMS AND PROGRAMMING

COBOL/CICS — LONDON — To £9,500
Central London based Insurance company housing IBM 4341's with DOS/VSE, COBOL and CICS requires a keen, enthusiastic programmer (preferably a graduate) with 12 months + COBOL/CICS experience to join their dynamic development team, working on a range of financial applications. They offer excellent benefits including subsidised mortgage, free lunches and flexi-time.
Ref. C 2368

DEC MUMPS — LONDON — To £11,500
Senior position with this City-based company for an analyst/programmer with around 4 years' DP experience, at least 2 years' analysis, and experience of DEC MUMPS. You will be offered every chance to move into management, and work with a variety of machines in a stimulating environment.
Ref. C 2129

BURROUGHS - COBOL — To £10,500
My clients, a major and successful household name, are currently seeking programmers and analyst/programmers with Burroughs mainframe expertise and a bias toward commercial applications. You will be involved in development work of a very high standard, and be encouraged to advance into systems and program design. Based in Herts, the department is large yet the teams within it are close knit, and professional. Phone now for more details.
Ref. A 1920

UNIVAC - COBOL — To £10,000
My clients offer the chance for experienced UNIVAC 1100 programming staff to join an expanding organisation where their ability to develop advanced business systems will be rewarded. You will be trained in both database and Insurance applications, whilst working in a real-time on-line environment, sited in the heart of Kent. Opportunities for progression are solid, and benefits include flexi-time, sports and social club and mortgage subsidy where appropriate.
Ref. A 1924

BUSINESS BASIC — CENTRAL LONDON — £9,000 neg.
With a minimum of 6 months' Business Basic experience on Data General equipment you could be joining this busy computer bureau serving a wide range of clients. Working as part of a small team, you will be expected to deal with users, develop and finally implement various systems. Ideal opportunity for an ambitious programmer to train in analysis. Ref. D 2319

IBM SYSTEM 38 — To £10,000
Would you like to work for a small DP department that offers you plenty of scope, variety and prospects? A dynamic commercial organisation based in N/W London are seeking an IBM System 38/RPG III programmer, with the potential to move into analysis. They have just recently installed the IBM System 38 and will shortly be embarking on exciting new development projects.
Ref. G 2248

IBM ANALYST/PROGRAMMER — £10,000+PERKS
A well-established financial concern have an urgent requirement for a competent analyst/programmer to take up a vital position within their DP department. You should have a minimum of 18 months' IBM COBOL or ASSEMBLER experience with exposure to either DL/1 or CICS. If you have the ability to respond to a challenging environment and seek a rewarding career please ring for further details!
Ref. G 2103

COBOL — CENTRAL LONDON — £9,500-£10,500 neg.
Major electrical concern based in Central London wishes to recruit competent analyst/programmers with Data General COBOL expertise. You will be working as part of a small team who are responsible for designing, developing, maintaining and implementing programs. You should have a positive attitude to work and the ability to work unsupervised. Ref. D 2324

APPLICATIONS SUPPORT PROGRAMMER — To £11,000
A well-established bureau based in the City has a requirement for an Applications Support Programmer, to support and maintain a variety of projects. The ideal candidate should have an IBM ASSEMBLER background with DOS/VSE, some CICS would be helpful, although training given where necessary. The position offers good prospects with the possibility to go into systems programming at a later date. Please ring for more details.
Ref. G 2349

IBM COBOL — BERKS — To £9,000
Variety of interesting positions in the Berkshire area for programmers with at least 12 months' IBM COBOL experience gained within an MVS, DOS/VSE, or VM environment. Opportunity to gain on-line and database experience and further your career.
Ref. C 4306

HONEYWELL - COBOL — To £10,500
This Berks-based manufacturing concern, housing both Honeywell level 66 and level 6, would like to meet programmers with a minimum of 12 months' relevant experience. Your involvement would be mainly in a development capacity, dealing with applications such as distribution and Inventory Control, Payroll etc. This is an ideal opportunity for a young programmer to further his career and knowledge as many training courses are organised. Promotion prospects and remuneration is excellent.
Ref. A 1709

RPG II/III — LONDON/HOME COUNTIES — £7-£11,000
Superb opportunities have recently arisen for capable programmers and analyst/programmers, within financial, manufacturing, insurance, commercial and software house environments. If you can offer at least 18 months RPG II or III on IBM GSD kit please give me a call for further information on the jobs and benefits available.
Ref GEN 42

IBM COBOL — WEST LONDON — c£10,000
Exciting position with this major world wide company, running IBM 4341 with DOS/VSE, CICS and DL/1. They are a capable programmer with 2 years' IBM COBOL, and preferably some CICS and or DL/1 experience, although full training will be provided for the right applicant. Plenty of development work in a friendly team environment.
Ref. C 2342

IBM COBOL — £8,£9,000
Are you a graduate? Do you have at least 12 months' IBM COBOL experience? If so, a major city Bank would like to hear from you. They have an IBM 4341 running under DOS/VSE with DL/1 and CICS (training provided where necessary). Here is your chance to take up a position that can offer real career prospects, a realistic salary, and a full banking package.
Ref. G 1857

ANALYST/PROGRAMMER — HERTS — £9,000
An excellent opportunity exists with this Hertfordshire based company for an analyst/programmer, with a sound IBM COBOL background on commercial applications. The company currently retain an IBM 4331 and 4341 under MVS and DOS/VSE with DL/1, and CICS. The ideal candidate will be completely involved with the design and specification of programs. Good prospects are offered coupled with various company benefits.
Ref. G 1820

ICL SYSTEM 10/25 — SURREY — £FIVE FIGURES!!
Can you offer 2/3 years' experience working with ICL System 10/25 equipment, are you capable of developing new systems, and working as an analyst/programmer? If so, then this major company involved in the travel Industry would like to hear from you. You will be working on a variety of interesting applications, from stock control to reservations systems. Excellent perks including discount on holidays abroad! Ref. D 2231

COBOL — ESSEX — £8,000 neg.
Expanding insurance concern situated in Essex are currently seeking to recruit a capable programmer with around 2 years' COBOL experience to join their busy development team that is about to embark on a major new project. You will be utilising their NCR kit, on which they offer full training. Conditions are excellent, including an excellent salary and various company benefits.
Ref. D 2352

DEC - BASIC — KENT — £9,000 neg.
International company housing DEC PDP and VAX equipment are currently seeking an analyst/programmer to help with the workload that major new systems has produced. You should have the capabilities to design and implement various packages, and the will to succeed. Excellent company benefits including subsidised restaurant and 5 weeks' holidays. Ref. D 2350

IBM COBOL — ESSEX — To £10,000
A large financial institution in Essex is currently looking for well-motivated programmers with a minimum of 18 months IBM COBOL and with the potential to move into analysis. You will be a vital member of a team, working on stimulating projects from start to finish. CICS exp. would be a great asset although, more important a good IBM background. The company offer excellent benefits and working conditions. Ref. G 2354

RETRAIN — ANY COBOL! — £NEG.
Are you a graduate COBOL programmer with between 1-4 years' experience? Then my clients, a multi-national London-based concern have an exciting opportunity for you! They are currently seeking an ambitious and versatile individual to retrain on to UNIVAC 1100 kit, whilst working on varied and involving applications from sales to accounts. You will have ample opportunities to further your DP knowledge (operating systems: database, assembler) by attending both internal and external courses. Company benefits are excellent and the salary will more than commensurate with your experience
Ref. A 2072

SNR HONEYWELL — COBOL — £NEG.
Can you offer a minimum of 3 years' DP experience, which includes an in-depth knowledge of Honeywell mainframes from the programming and/or the analysis side? If so this central London-based commercial organisation, with branches throughout the country would be interested in you. They house Honeywell L64/DPS2 kit utilising TDS and IDS II, and are currently developing new, interesting systems using 'State of the Art' technology. The company offer serious prospects for speedy advancement together with an excellent benefits package. Ref. A 2296

ANALYST/PROGRAMMER — N. LONDON/HERTS — To £12,000
Interesting position with this financial company for an experienced analyst/programmer to work on both development and package tailoring/support. You should have at least 3 years' RPG II or III experience (some RPG III or IBM system 38 essential) 12 months' analysis, and be mature enough to liaise confidently with users at all levels. Any knowledge of financial or pension systems advantageous, as you will hold entire responsibility for this side of the business.
Ref. C 2345

ICL COBOL — CITY — To £10,000
Professional firm based in the City of London is currently offering the opportunity for an ambitious programmer to join their busy team working with absorbing systems. You should have a minimum of 2 years' ICL COBOL experience and a positive attitude towards work. If you are looking for a challenging job that can offer real career prospects, call now for further details.
Ref D 2208.

HEWLETT PACKARD - COBOL — To £10,500
An opportunity to join a highly reputable, international manufacturing organisation as part of its advanced and successful DP department. You must have a minimum of 12 months HP 3000 experience, hopefully coupled with a knowledge of IMAGE VIEW and QUERY. They seek people who are looking to advance their careers and offer the chance to work with exciting development projects in a high growth, high technology environment. The generous benefits package includes profit share bonuses, BUPA and relocation if required to their Berks based offices. Ref. A 1010

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Computer Personnel Consultants
01-247 3356 (24 hrs)
Brushfield House Brushfield Street
Bishopsgate London E1 6AN
Part Of a Technical Services Group Est 1969

Programmer/Analyst

The Science and Engineering Research Council is currently reviewing its administrative computing requirements and expects to purchase a number of software packages to meet them. In connection with this the Daresbury Laboratory, one of the Council's major laboratories, situated in the North Cheshire countryside is seeking a programmer/analyst for the Applications Group of its Computer Systems and Electronics Division.

The Laboratory provides major facilities for scientific research undertaken by University research workers from this country and abroad. The computers at the Laboratory include NAS 7000, GEC 4000s, VAX and PDP 11s.

The successful applicant will assist in implementing the packages, in developing links between them and existing systems and in the provision of programming and database support.

The Applications Group supports a wide range of scientific and administrative databases on several different computers and opportunities to participate in these projects will arise.

Applicants (male or female), should have a good honours degree (or equivalent qualification) in an appropriate scientific discipline and a sound programming background. Experience in some aspect of database systems or package implementation, particularly on IBM computers, would be an advantage.

The appointment will be made at Scientific Officer or Higher Scientific Officer level depending on qualifications and experience. The salary ranges for SO/HSO are £5,422 – £7,399 and £6,840 – £9,126 per annum respectively.

There is a non-contributory superannuation scheme, a generous leave allowance and a flexible working hours scheme. Some assistance with expenses for house sale and purchase may be available.

CLOSING DATE: 28th March 1983

For further information please write to or telephone Dr. M. Elder on Warrington (0925) 65000 Ext 350.

Application forms may be obtained from and should be returned quoting reference number DL/809 to:

The Personnel Officer
Science & Engineering Research Council
Daresbury Laboratory
Daresbury
Warrington
Cheshire WA4 4AD

Daresbury
SCIENCE & ENGINEERING RESEARCH COUNCIL

(3142)

UNIVERSITY OF ESSEX
Department of Electrical Engineering Science

Lecturer in Software Validation/Specification related to Real-Time Systems

Applications are invited for the above post (Salary scale £6,375-£13,505), for appointment from 1 October 1983 to support teaching in the MSc course in Telematics. This course which runs alongside other graduate courses in the telecommunications area has recently been recognised by the SERC for Information Technology conversion.

Candidates should have an Honours degree and experience (possibly gained in industry) of software validation and specification related to distributed systems and protocols. The person appointed will be expected to contribute to the graduate Telematics course and to the undergraduate teaching, and will also participate in research in the distributed systems area. Both teaching and research in the Department are extensively supported by British Telecom.

Further particulars may be obtained from the Registrar (ref AG/181/CW), University of Essex, Wivenhoe Park, Colchester CO4 3SQ to whom applications (3 copies) including a curriculum vitae and the names and addresses of 2 referees, should be submitted by 5 May, 1983.

(3165)

systemstechnology

Systems Designers Programmers – Guildford – to £12,000

Systems Technology develop software and systems engineered and packaged to the highest standards for use in non-stop applications and no-support environments. Applications include graphics, interactive terminal systems, communications networks and reservation systems. Our clients include major international corporations for whom developments are undertaken throughout the world.

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You're probably in your mid twenties to early thirties with a good honours degree in computer science or closely related discipline and solid experience of designing and implementing complex technical or systems software. Experience with PDP11/VAX operating systems is particularly relevant, as is fluency in Pascal, Fortran and at least one assembler. You will have gained working knowledge of the product ranges of a number of manufacturers, for example, Digital, Hewlett Packard, IBM, and Modcomp. Most importantly, you have a desire to succeed, the ability to deliver elegant solutions to challenging problems and a willingness to contribute your ideas and experience to a company that takes notice.

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Jane Putman
Novus Systems Technology Ltd
Waymead House
Millbrook
GUILDFORD GU1 3YA
Tel: (0483) 69933

(3160)

DEPUTY OPS MANAGER

around £10,000 pa — Herts/Essex

We are a successful retail organisation with a twin IBM 4341, VM/VSE, CICS, DL/1 installation at our Waltham Cross headquarters situated on the Herts/Essex border.

A new IBM 3083 is on order and we plan to substantially increase our investment in communications and remote processors. There is a second data centre at our Northern Administration Office in Bolton. Our expansion plans have created a need for a **Deputy Operations Manager** to handle day to day eventualities, make scheduling and shift resourcing decisions and provide management continuity in the running of computer systems.

You are probably a senior operator or shift leader at present with a sound understanding of the controls and procedures required to ensure a top quality service to computer users. Your experience will have been gained in an IBM environment, preferably on a 4341 processor. You will be also familiar with the operational requirements of VM/VSE, CICS and DL/1.

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In addition to a competitive salary we offer a stimulating work environment, excellent career development prospects and a range of employee benefits which includes help with relocation costs where appropriate.

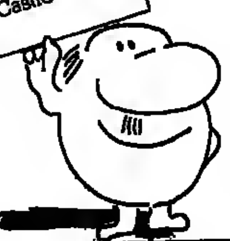
For further information on the company and our development plans please contact Gill Malone at Castle Recruitment. Daytime number (04427) 74941, Evenings and Weekends (04427) 2528.

Alternatively send your c.v. to her at: Castle Recruitment, ECL House, Park View Road, Berkhamsted, Herts, HP4 3EY.

RECRUITMENT 1983

This advertisement is one of a planned series to recruit a whole range of development and operations support staff during 1983. Our expansion plans mean real career opportunities for people who join us now.

If you feel that you can contribute in any of these positions in the future please contact Castle Recruitment on (04427) 74941.



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(3131)

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At the junior and middle level we are particularly interested in those experienced in DEC PDP/11, VAX, Data General Mini's, Argus 700, Tandem, Intel, Motorola, Hewlett Packard, etc., using high and low level languages. **Most urgent requirements** (like yesterday) are for Software Engineers using Intel 8000 series with experience of Data Aquisition or Process Control, and for Programmer/Analysts using PDP/11 or VAX who have worked on Communications, Industrial Control or Defence Systems.

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Scientific: Graphics Systems, Image Processing, Expert Systems, Geo Physics.

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Up to 11·00 pm each evening and weekends

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ANALYST/PROGRAMMERS COMMUNICATIONS to £16,000
An international software house has vacancies at several levels up to Project Manager status, for persons with good communications or message switching software experience. Our clients can offer the opportunity to be involved in the development and implementation of sophisticated systems based on the latest DEC equipment for a rapidly expanding client base and can reward appropriately.

ANALYST/PROGRAMMERS DEC/FORTRAN to £11,000+CAR
One of the country's leading retail organisations based in Middlesex, utilising advanced systems on DEC PDP machines, is seeking 2 further Analyst/Programmers. 2-4 years' FORTRAN experienced, gained in an RSX11 environment, is required for these rewarding positions. A fully comprehensive benefits package is offered which includes a company car for the senior position.

ANALYST/PROGRAMMER PDP & VAX to £11,000
This City based organisation with a multi DEC PDP system requires a further Analyst/Programmer to work on commercial and financial systems development with their new VAX equipment. They seek someone with 2 or more years' DEC BASIC gained either with RSTSE or VAX. Salary is fully negotiable and is complemented by a comprehensive benefits package.

SENIOR PROGRAMMER ICL COBOL to £9,500
Our client, a large financial concern, situated in Surrey requires an ICL COBOL programmer with 3-4 years' exp. and who is capable of leading a small team. Excellent prospects are available within their development programme, utilising 2900 equipment currently working under DME but soon to move to a VME/B environment.

ANALYST/PROGRAMMERS PL1 £11,000
Applicants should have at least 2 years' PL1 in a commercial/manufacturing background. The client is an established and progressive computer user with the DP centre based west of London. Not only should applicants have strong user skills they should also have good management potential since the client regards all successful candidates to become future managers. There is a full relocation package available.

ANALYST/PROGRAMMER RPGII/III £10,000
International bank has identified a requirement for an Analyst/Programmer with a solid GSD background. The bank is converting from a System 3 to a System 38. Applicants should have at least 1 year's programming with some systems experience in a GSD background (RPGIII would be of special interest). As well as a good starting salary a standard banking benefits package applies.

ANALYST/PROGRAMMER RPGII/III £9,500
Subsidiary of an international concern with a C. London base has a requirement for an Analyst/Programmer with at least 1 year's RPGII in a 34 environment. This is an ideal opportunity for a programmer to take on some analysis responsibilities since candidates do not have to have analysis experience. The department is fairly small and career prospects will be good.

ANALYST/PROGRAMMERS HP COBOL to £12,000
Two companies based in London utilising HP 3000 equipment require Analyst/Programmers to join their DP teams. Applicants should have 2-3 years' COBOL with some exposure to HP systems and software. Both sites have fairly small departments but are expecting expansion in the near future. Perks are varied and include 6 weeks' holiday with one company.

PROGRAMMERS HP 3000 to £9,000
Surrey based installation requires a Programmer with around 18 months' COBOL to join their team. Knowledge of HP useful but not essential as training will be given. C. London/N.W. London based software house seeks Programmers with 1-2 years' experience of either SPL, FORTRAN, BASIC or PASCAL. Applicants can expect a good deal of client contact and must be professional in outlook and attitude. A variety of perks are offered including company car scheme.

PROGRAMMERS HP COBOL c. £9,000
Company based West of London, a market leader in their field, requires 2 additional Programmers to join their teams. Applicants should have 2 years' COBOL gained in a commercial environment preferably with exposure to on line and data base systems. Knowledge of HP 3000 systems and software would be advantageous. This is a good opportunity to work on a variety of applications. Large company perks include 6 weeks' holiday.

(3117)

404 4821
Apex
Apex Computer Recruitment Ltd.
London Office: 59 Grays Inn Road, London WC1X 8TL. Tel: 01-404 4821.
Brussels Office: Rue Gatti de Gamond, 24. Uccle 1180 Brussels. Tel: 010 322 377 4193.

your appointments register

Programmers

- NCR/IBM/COBOL — to £14K — Insurance · Banking — London · H. Counties · N. Eng.
- COBOL/PL1/OS/CICS/IMS — to £13K — Commercial — H. Counties · Midlands · Manchester
- HEWLETT PACKARD — to £9K — Commercial Accountancy — Hampshire
- HONEYWELL — to £12K — Systems Programming experience — Middlesex
- DEC/HP/WANG/DG — to £12K — Basic · Cobol — Berks · Surrey
- IBM/RPG2 — to £12K — Financial/Insurance — Home Counties
- IBM — to £16K — System exp. — Essex
- ICL/VMEB or K — to £11K — Financial — Surrey
- IBM/UNIVAC/COBOL — to £12K — On-line/Database — Surrey
- NCR 8200 — to £14K — Financial — SW LONDON

Analyst/Progs

- BURROUGHS/COBOL — to £14K — Commercial — Surrey
- IBM 34/38 — to £15K — London/Home Counties/North
- DATA GENERAL/COBOL — to £11K — Commercial Mintexpedence — London
- IBM/COBOL — to £10K — Scotland

Hardware/Support

- APPLICATIONS ENGINEER — to £14K — Systems/Peripherals — Based N. England
- TECHNICAL SUPPORT — to £13K — Pre and Post Sales — Nationwide
- SERVICE ENGINEERS — to £10K — Nationwide
- TECHNICAL AUTHORS — to £ Neg. — UK + Europe
- CAD/CAM/GRAPHICS — to £15K — Home Counties
- ENGINEERS — to £15K — Torch Micro/Networking — London

Systems Analysts

- IBM/ICL — to £12K — Stock Control/Commodity Control — London
- CAD/CAM — to £16K — Real time · Modelling — Mon · Essex · South West
- IBM/BURROUGHS — to £15K — Commercial Accountancy — London/Surrey/Manchester
- IBM — to £15K — Insurance/Financial — W. Sussex
- ICL/ME29 — to £16K — Commercial Design — Berks.
- IBM/ICL — to £12K — On-Line — Croydon

Software Engineers

- CORAL/PASCAL/MASCOT/C — to £13K — Communications — Glos/Hants/Sussex/Midlands/Manchester
- FORTRAN — to £12K — Finite Element/Graphic Display — Home Counties
- MILITARY SYSTEMS/RADAR — to £11K — Coral · Mascot — Hants/Surrey · Essex · S. West
- PDP/VAX/INTEL — to £13K — Telecomms · ATE — Surrey/London/Kent
- COMMS/TELECOMS/MOD — to £14K — Mini/Mainframe — E. Anglia
- HP3000/INTEL — to £12K — CAD/CAM/ATE — Home Counties
- TERMINAL EMULATORS — to £15K — C/Assembler — London

Snr Appointments

- PROJECT LEADER — to £15K — Military Systems — Berks/Hants
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- SENIOR CONSULTANT — to £13K — Accountancy qualifications — Berkshire
- TEAM MANAGER — to £17K — Computer Modelling — S. London
- ICL/PRE- AND POST-SALES SUPPORT — to £16K — Berks.
- SENIOR SOFTWARE ENGINEER — to £18K — Software capabilities/Technical consultant — E. Anglia

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(3118)

UNIVERSITY OF ESSEX

Department of Computer Science

Lectureship in Database Management or Software Engineering

Applications are invited for the above post (salary scale £6,375-£13,505) for appointment from 1 October 1983, to contribute to the teaching of the MSc course in Computer Studies. This post has been established under the UGC Information Technology Initiative.

Candidates should have expertise in such areas as Database Management and Software Engineering, be able to develop links with industrial and commercial groups and participate in the work of the Department's existing research groups in the above areas.

Further particulars may be obtained from the Registrar, (ref AG/160/CW), University of Essex, Wivenhoe Park, Colchester CO4 3SQ to whom applications (8 copies), including a curriculum vitae and the names and addresses of 2 referees should be submitted by 25 April 1983.

(3166)

DIBOL PROGRAMMER

An experienced Dibol Programmer (min. two to three years') is required for this specialist software house situated at Hendon Central in North West London. Opportunities include possible foreign travel to support export clients and work using the very latest program generator. Excellent salary offered according to experience.

Contact Alan Clayman or Michael Sprei,
DATAMODE (COMPUTER SERVICES) LIMITED
Rodary House
Alderton Crescent
London NW4 3XX
Tel: 01-202 2664

(3139)

UNIVERSITY OF KENT AT CANTERBURY

Computing Laboratory

RESEARCH FELLOW IN SOFTWARE TOOLS

Applications are invited for a Research Fellow to work on a three-year contract under the SERC Common Base Policy (UNIX, PERQ, Cambridge Ring). The Fellow will work at the Software Tools Centre at Kent and will be responsible both for developing tools and for validating tools produced by others. A knowledge of UNIX and Pascal is most desirable, together with the imagination to exploit graphics and networks.

The salary will be in the range £6,375-£11,105 on the scale for Research Fellows (R & A 1A), and the appointment will be for a fixed three-year term.

Application forms and further particulars will be sent upon the receipt of a stamped addressed envelope, by Mr. Alan Soutter, Administrative Assistant, The Registry, The University, Canterbury, CT2 7NZ. Please quote reference A11/83/CW on the envelope. The closing date for the receipt of completed forms is Friday, April 29th, 1983.

(3144)

POLYTECHNIC OF CENTRAL LONDON

Computer Centre

EXPERIENCED SHIFT OPERATOR

To work on DEC10 and VAX machines at the Polytechnic of Central London. Two shift system with overtime opportunities, good salary with opportunity to join expanding innovative Computer Centre. Good standard of education, ability to use own initiative and work under pressure are essential requirements. Day release opportunities could be available to successful applicant.

Application form and further details available from Establishment Office, PCL, 309 Regent Street, London W1R 8AL. Tel: 01-580 2020 ext 212. Closing date: Friday, 8th April, 1983.

(3042)

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IBM OS/MVS Roscoe operators analysts
IBM network controllers
ICL 2900 VME operators consultants

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ADABAS DATABASE – All levels
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DEC/PDP11, MUMPS
DEC RSX11M Macro
IBM Fortran
HONEYWELL 6 or 66 COBOL (also in Germany)

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We have a number of opportunities for people with experience in either a commercial or military environment with any of these skills:

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CORAL	PL/M	MOTOROLA
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ICL

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DME	TPMS	S3
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IBM PLI CICS
IBM copics programmers
IBM DOS VSE systems programmers
IBM MVS database administrator
★ We always require DATABASE AND SYSTEMS PROGRAMMERS ★
Various locations, U.K. and Overseas

U.K. – OTHERS

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UNIVAC 1100 COBOL
UNIVAC 1100 COBOL, DMS and/or TIP
HP 3000, COBOL
CMC REALITY BASIC
IBM FORTRAN
Honeywell L6 or 66 GCOS Cobol
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(Agy N298)

(3169)

SYSTEMS AND PROGRAMMING

IBM COBOL PROGRAMMER

CITY — £11,000

This major foreign bank wish to engage an experienced IBM Cobol Programmer. This person will work on IBM 4341 hardware. Preference will be given to candidates who can display expertise in CICS and DL/1. All major banking benefits are available. S.6639

PL/1 ANALYST/PROGRAMMERS

BERKSHIRE — £10-£15,000

This prestigious company have vacancies for people with two to three years' PL/1 experience. They retain IBM hardware and offer a range of varied and impressive benefits. These include N.C. Pension, bonus schemes, company discount, etc. S.7197

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Expanding organisation situated close to London has a vacancy for someone with the following experience: Assembler, In-depth knowledge of MVS, CICS, IMS, CLIST, TSO tuning and performance analysis experience. This is an ideal ground floor opportunity. S.7225

IBM TEAM LEADER

LONDON — £12,000

This well established and world renowned business urgently require a Programming Team Leader. Four to five years' Cobol, two years' CICS and some supervisory experience will secure this post. Benefits include subsidised restaurant, S.T. loan, etc. S.7229

WANG COBOL PROGRAMMER

CITY — £10,000

A subsidiary of a major bank wish to engage a Cobol Programmer for development work. Applicants should be graduates in their mid twenties with two years' commercial experience. Preference will be shown to candidates with large scale mini experience. X.5952

FORTRAN ANALYST/PROGRAMMERS

SURREY — £10,000

Situated in a pleasant part of Surrey this world famous company are currently seeking to recruit a number of experienced Fortran Analyst/Programmers. Preference will be given to candidates with a relevant degree and an excess of two years' commercial experience. X.Gen

IBM SNR ANALYST/PROGRAMMERS

C. LONDON — £ NEG.

A financial institution in Central London wish to recruit two Senior Analyst/Programmers. Successful candidates will have five years' IBM Cobol coupled with two years' analysis experience. The company retains IBM 4341 hardware and offers a package including subsidised mortgage. S.7199

DEC PDP ANALYST

ESSEX — £10,000+

A publishing company located in rural Essex wish to increase their DP staff by engaging an experienced Analyst. Good applications experience and a varied knowledge of commercial applications are required for this position. Subsidised lunches and Non Contributory Pension are part of the extensive package. X.7122

T.I. COBOL PROGRAMMER

CITY — £ NEG.

This famous financial company require an experienced T.I. Cobol programmer. Applicants must have a stable work record and be able to communicate with users. Benefits include profit sharing, S.T. Loan and L.V's. X.6509

SYSTEMS ANALYST

LONDON — £12,000

Well established software house require a Systems Analyst to work on various projects relating to a mini computer environment. Financial experience an asset but not essential. Candidates must be able to investigate and produce a feasibility study. X.7048

TANDEM PROGRAMMER

LONDON — £10,000

City organisation wish to recruit an experienced TANDEM programmer to work on financial applications. The position carries considerable benefits and a competitive salary is offered to the right individual. G.7112

BURROUGHS PROGRAMMER

LONDON — £8,000-£9,000

Prestigious West End organisation is seeking experienced Burroughs people with a good knowledge of DMSII. Excellent company benefits include BUPA, Interest Free Season Ticket Loan and Contributory Pension. G.7162.

NCR ANALYST PROGRAMMER

S.W. LONDON — TO £13,000

A leading commercial bureau is looking for an individual with three years plus NCR IMOS III experience. A good knowledge of payroll and accounting applications is of prime importance. G.7093

UNIVAC PROGRAMMER

BUCKS. — £9,000

Aylesbury based organisation seek to fill a demanding position. The right individual will possess at least two years' Univac 1100 experience with sound knowledge of DPS and TIP. G.7063

ICL SYSTEMS ANALYST

W. LONDON — TO £11,000

Well known company are seeking an experienced Systems Analyst to take a major role within the organisation. Knowledge of payroll, personnel and accounting systems would be a distinct advantage. G.7228

FOR FURTHER INFORMATION, PLEASE TELEPHONE 01-439 7871

CONTRACTS

IBM		
SWIFT	Analyst/Consultants	London
Cobol, DDS/VSE, CICS	Analyst/Programmers	London
System 38, RPG III	Analyst/Programmers	Various
Any GSD + Insurance	Analysts	London
Cobol, OS/VSI, CICS	Analyst/Programmers	Various
PL/1, IMS, DB/DC	Analyst/Programmers	London
System 34 + 38	Analyst/Programmer	Various
Cobol + Any Online	Programmer	West
IMS DB/DC	Designer/Administrator	West
Cobol, CICS, DL/1	Team Leader	London
IMS/MVS	Systems Programmer	Surrey
ICL		
ME29, Cobol, IDMS	Analyst/Programmers	Middlesex
VME 2900, Cobol, IDMSX SCL	Analyst/Programmers	London
VME/B, Cobol, IDMS	Analyst/Programmers	London & Herts
DRS, CIS Cobol/Assembler	Programmer	Various

OTHERS		
CIS, Cobol + Accounts	Analyst/Programmers	Various
CP/M, MBASIC	Programmers	London
TI990 Cobol	Programmer	Surrey
B800, LINC	Analyst/Programmer	France
Z80, Basic + Assembler	Programmers	London
HP 3000, Image, View/Query	Programmers	Berkshire
VAX 11/750, RMS, Cobol, DBMS	Analyst/Programmers	Bucks
VAX 11/780, VMS, Basic/Cobol	Analyst/Programmers	Surrey
VAX 11/780, VMS, Cobol Systel	Analyst/Programmer	Surrey
Datapoint Programmers Urgently Required		Middlesex
PDP, RSX 11M, Macro 11	Analyst/Programmers	Berks
B6600, DMS2, GMCOS	Analyst/Programmers	Surrey
Technical Authors		Berks & Herts
TANDAM T16 TAL	Programmers	London
Univac 90/30, Cobol, TIPS	Programmers	London
NCR, NEAT 3, Level 2	Programmer	Berkshire

FOR FURTHER INFORMATION PLEASE PHONE 01-439 1856

OPERATIONS

SHIFT LEADER

BERKSHIRE — £7,200

The ideal candidate for this challenging position will have at least two years' experience of H.P. 3000 and additionally some knowledge of ICL GII or GIII, although the latter is not essential. This is a demanding role requiring an intelligent and self-motivated individual. J.7030

IBM OPERATORS

BERKSHIRE — £ NEG.

A major financial organisation situated in Berkshire require IBM 4331 operators with a minimum of one year's experience of OS/VS1, although applicants with MVS will be considered. Varied benefits are available and the company operate a progressive shift pattern. J.7215

ICL OPERATOR

BERKSHIRE — c. £6,250

A subsidiary of a large organisation requires an operator with two year's experience of GII+ and ideally some knowledge of ME29 series. Applicants must be capable of working alone and largely unsupervised. J.7208

IBM 4341 OPERATOR

CITY — £7,500

This forward looking company offers an excellent ground floor opportunity to someone with two years' VM experience, together with an understanding of T.P. Salary will be reviewed and subsidised loans are available after an initial six month period. J.7227

TECHNICAL SUPPORT ANALYST

CITY — UP TO £7,500

A well established financial organisation requires an individual with an operations and programming background to join their Technical Support Team. Preference will be given to candidates with data communications knowledge and who possess a degree in computer studies. J.7187

DEC SNR OPERATOR

SURREY — c. £7,000

A large installation requires a Senior Operator with good experience of PDP 11/70 equipment. Although a two shift system is in operation applicants should ideally possess their own transport. J.7170

FOR FURTHER INFORMATION, PLEASE TELEPHONE 01-439 7871

APPOINTMENTS

RECRUITMENT CONSULTANTS

£15,000+

These positions involve the placement of experienced computer staff on a permanent basis. We are looking for self-motivated individuals who are capable of showing a professional business attitude coupled with the drive to succeed in a sales environment. Recruitment or Sales experience is ideal but training will be given where necessary. We offer a good basic salary + commission (guaranteed for the first three months), Private Patients Plan and usual holiday arrangements.

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The contract division handles assignments for contract personnel and involves obtaining requirements from clients, matching these against contractors who are looking for work and negotiating rates on both sides. You must be quick thinking and aware of all matters in progress. Experience in selling and computing is essential. The rewards are high, with a negotiable guarantee provided for six months. We will provide you with a company car and private medical insurance.

If you are interested in these positions, then call Mike Dauncey on 01-439 1856. All enquiries will be treated in the strictest confidence.

(3116)

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GREATER LONDON

recruitment special

If you are recruiting computer professionals to work within the Greater London area, then Computer Weekly is the journal you need, because Computer Weekly gives you a higher circulation amongst the key job categories than our nearest weekly competitor. More Systems Analysts/Designers, More Programmers and More Operations staff.

The April 21 issue provides an added bonus with our special editorially supported feature, highlighting the range of career opportunities and prospects for computer professionals in this important computer centre. This is just one of many career-linked features to be published during 1983 aimed at helping readers' improve their career prospects and at the same time provide the platform needed by recruitment advertisers when seeking staff.

Computer Weekly is Britain's leading computer journal both in terms of circulation and its dominance of the key job categories. Equally important is the preference computer people have for Computer Weekly over other journals in the market, a preference that has been repeatedly verified and documented in detail through independent research.

To reserve space in the Greater London Feature phone (01) 661 8080.
Copy deadline is Monday, April 18.

Classified Department, Quadrant House, The Quadrant, Sutton, Surrey, SM2 5AS

Office Systems Specialist

Cummins Engine Company is the world's largest independent manufacturer of diesel engines. There are various manufacturing locations and offices throughout the UK and at the Daventry facility we produce 900-1600 horsepower engines, the majority of which are exported.
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To support this activity we wish to appoint an Office Systems Specialist with responsibility for providing central expertise in office technology, promoting its applications and ensuring compatability among the UK locations.
We are looking for a mature self motivated individual who ideally would have experience in the following fields:
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- Systems Analysis and Programming
- Word Processing
- Communications to IBM Equipment

A reasonable amount of travel within the UK will be involved although the base will be Daventry.
We can offer excellent terms and conditions of employment. Relocation assistance will be available in approved cases.

1979 1981 1982

For an application form, please write or telephone to: Mike Fearey, Personnel Manager, Cummins Engine Company Limited, Royce Oak Way South, Daventry, Northants NN11 5NU.
Tel: Daventry 4400 extension 207. (3184)

Cummins

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● TRAINING ENGINEERS
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Applicants, male or female, should be between 25 and 35 years of age, have 3 years' relevant experience, be qualified to HNC/Degree level and preferably have a second language as extensive European travel will be involved.
All positions, except Training engineers, are based in Milton Keynes and carry an attractive salary/benefits package including relocation, if necessary.
Complete curriculum vitae should be sent to: Judi Lion, Motorola Ltd., 88 Tanners Drive, Blakelands, Milton Keynes, MK14 5BP. (3136)

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Semiconductor Sector

Experienced Programmer

Butterworths is one of the largest UK Book Publishing houses and specialises in legal, medical, scientific and technical books.
We are looking for a person particularly skilled in programming preferably someone who has seen a project through from basic design to implementation. The person appointed will join a small team which provides computing services to all departments of the Company.
The systems currently in operation are order processing, subscriptions, sales ledger, nominal ledger and cost ledger. These are run on two large DEC PDP 11/70's. Most of the processing is interactive through some 50 VT100 terminals. The programming language is a sophisticated combination of COBOL and BASIC.
One of the 11/70's has spare capacity to accommodate new systems which are urgently required.
After a short period of familiarisation the successful applicant will be expected to work with minimum supervision on specific systems. This will include: specifying the system, program writing, documentation and training. The person must be able to work closely with the user during and after implementation to ensure that the system fulfils all the requirements as specified.
Please write giving full details of qualifications and experience to:
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Butterworths

Support Analyst Programmers

Neg. to £12,000 plus car

We are a fast growing WANG and HONEYWELL Systems and Software House. Our speciality is in commercial applications as part of turnkey systems whilst providing software consultancy skills to a large number of international corporations.

Due to a considerable increase in both our UK and Overseas activities we now require Support Analyst Programmers at a variety of levels up to Project Leader.

If you are highly motivated, willing to accept immediate responsibility and can work happily alone or as part of a team then we could be right for you.

For people familiar with real time minicomputer systems using WANG BASIC, or HONEYWELL LEVEL 6 COBOL-SCREEN WRITE the opportunities are tremendous.

If you can demonstrate these qualities, please send your CV to Stuart R. Allan, Technical Director

AOS (Computers) Limited
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Tel. Slough (0753) 75167 (3138)

ADS

COUNTY TREASURER'S DEPARTMENT

The County Council with offices in Barnsley have two 2966 MG ICL Computer Systems supporting considerable on-line, remote batch and conventional batch processing running under DME/G3 operating system. Work is currently in hand to introduce message routing software on the 7808FEP to give terminal access to both systems.

Applications are invited from suitably experienced persons for the following post:

SYSTEMS ANALYST
POST REF: T253 Grade AP4/5
Salary: £6,873-£8,325

Applicants should have wide technical experience preferably using data base techniques. The successful applicant will be involved in the development of a wide range of systems for all departments of the county council on both mainframe and mini-micro computers (whichever is the best medium).

The County Council operates a system of flexible working hours and payment of removal expenses, lodging and travelling allowances will be made in appropriate cases.

Please write for an application form, quoting the appropriate post reference to the Chief Executive (Personnel), South Yorkshire County Council, County Hall, Barnsley S70 2TN or telephone Barnsley (0226) 86141 Ext. 266.

Closing date for applications will be April 22, 1983.

South Yorkshire County Council is an equal opportunities employer.

South Yorkshire County Council
SETTING THE PACE (3172)

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Our client, a leading international firm of Chartered Accountants, wishes to keep abreast of developments in the ever advancing field of computer audit technology. Accordingly, applicants for the above position will be bright young qualified accountants with at least two years experience of audit in a computer environment. Age 25-35 years.

Varied and complex client assignments will test the abilities of the successful applicant, ensuring that he/she remains aware of all new system developments (supported by a comprehensive R & D budget). Other duties include the preparation of lectures and planning of courses on computer auditing principles and techniques, for the benefit of both audit staff and clients.

This opportunity offers challenge, diversity and substantial reward in line with the commitment shown by the successful candidate.

Please write, in confidence, stating any companies to whom you do not wish your details forwarded, to:

C. Cole, Chief Executive, (Ref. C130).

Grant Forrest Recruitment
Pegasus House, 375 West George Street, Glasgow, G2 4LW
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Applications are invited for a post of RESEARCH OFFICER in the above Department for work on the design and implementation, in collaboration with a leading computer manufacturer, of an interpreter/compiler based on advanced techniques. A good honours degree in Computer Science and relevant experience are required. Post available immediately for a fixed period of one year.

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Application forms and further particulars may be obtained from the Registrar, The University, Leeds LS2 9JT, quoting reference number 48/42AZ. Closing date for applications, 2 May, 1983. (3135)

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to join the Library Automation Group, responsible for designing, programming, implementing and maintaining computer-based systems used in the Library. A CTL 8048, with 300 Mb of disc store, and remote terminals, which include Newbury vdus and Telepen data collection units, was installed in 1982. The Group is directed by a systems analyst and includes a senior programmer.

Applicants should possess a degree or equivalent qualification. A sound knowledge of COBOL or CORAL is required and experience with text manipulation rather than mathematical processes would be an advantage.

The appointment is for two years on the University salary scale £5550-£9370 per annum.

Applications (2 copies) giving details of age, qualifications and experience together with the names and addresses of two referees should be sent as soon as possible to Mrs. E. C. P. Sears, Staffing Department, University of Southampton, Highfield, Southampton SO9 5NH, quoting reference 1521/P. (3177)

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The successful applicant will be responsible for setting up and maintaining a wide range of services including Time Sharing, Software Development and other Bureaux activities.
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For further information please telephone: Rachel Ancell on 01-961 6346 or send career details to:
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Wrexham Maelor Borough Council
MANAGER
Wrexham Information Technology Centre

SALARY CIRCA £11,000

The Wrexham Maelor Borough Council, together with a group of interested industrialists is establishing an Information Technology Centre as part of its industrial development programme on the Whitegate Industrial Estate at Wrexham. The Centre will provide training in the first instance for 30 young people in industrial microelectronics, computing and electronic office skills. The development of marketable services and products is to be encouraged and as part of the Authority's industrial development programme it is envisaged that some of the persons trained will develop the necessary skills to establish their own business. Accordingly, there will be a strong link between local industry and the Centre. A Manager with relevant experience experience and qualifications is required to establish the Centre as an important facility for expanding the use of microcomputers in the community and providing skilled personnel for the business sectors of the area.
Assistance with temporary housing accommodation and reimbursement of removal expenses will be considered in appropriate cases. Initial three year contract.

Applications, which should be a comprehensive C.V., should be addressed to Personnel Officer, Wrexham Maelor Borough Council, Guildhall, Wrexham LL11 1AY. Tel. No. Wrexham 364611, Ext. 46.

Closing date: Wednesday 20th April, 1983

PER WREXHAM TEL. 356575

PER Executive Selection

SALES BIT

Quality of Management—47

You can't leave everything to recruitment agencies

AN external recruitment consultancy carries out much the same process as one might perform for one's self.

The main differences ought to be (and I say "ought to be" advisedly, for there are some inadequate recruitment companies around!) the presence of superior copy-writing skills, access to discounted advertising, the provision of client annymity, and above all the ability to devote its operation to handling response with the kind of urgency, commitment and understanding one would wish for one's self.

Recruitment companies are not typically more discerning or perceptive than the average sales manager.

Their interviewing technique ought to be more polished, but they are no more likely to identify inadequacies such as dishonesty and laziness than one's self; no less susceptible to being seduced by smooth talking "guarantee hoppers".

The real strength of external consultants is their devotion of effort to the recruitment process in contrast with the sales manager who has too many demands from his sales team, clients and other business for him to ignore everything but recruitment for, say, a couple of weeks.

It is well established that good salespeople are extremely difficult to find and those who do decide on a change of employer usually become fickle about whom they wish to speak, and the effort they are prepared to make in pursuit of an advertised job opportunity.

Many a potential candidate makes only one attempt to contact advertisers, perhaps on impulse. If he does not receive a prompt response to his telephone call, the chances are he will not bother to try again.

The high cost of advertising and the even greater cost of unmanned sales territories makes it essential that no potential candidate is lost through lack of ability to respond positively whenever such unpredictable calls occur.

Having said all that, I may have created the illusion that advertising automatically generates a large volume of response and the task of the recruitment agency is merely to sort it all out.

Nothing could be further from reality.

At present response to all advertising is poor, relative to the volumes enjoyed, say, a couple of years ago. And this is not exclusive to sales personnel, or even to the computer industry.

The head of a large media company recently told me that the response to advertising for proven people with special skills and experience had fallen considerably of late.

This was a surprise to me particularly in the light of the current levels of unemployment.

Many of those who are currently in secure jobs appear to consider the world too unsettled and uncertain to take career risks.

Consider all those salespeople who did not achieve their numbers last year.

At least those with a record of past achievement are likely to receive some latitude from their present management, whereas failure is unlikely to be tolerated with similar liberality in a new company with no track-record to substantiate their ability to sell successfully.

This has a real influence on those who might otherwise be thinking they would like to change employer or wish to respond to an advertisement.

But back to the external recruitment consultancy. The biggest mistake most sales managers make is to consider the arrangement a one-way process – "the task is sub-contracted to a third party so there is no role for me to play other than making the final choice!"

Again, nothing could be further from reality.

There is much to be done, especially when an external recruitment consultancy is involved. Here are some considerations that are crucial to the success of a consultancy-based recruitment exercise:

- Candidates short-listed by the consultancy must be seen immediately;
- Limit the assessment and selection process to a maximum of two interviews;
- Remember the interview must be a two-way sell;
- The interviewer must totally understand the job specification;
- Do not limit the search to "Jesus Christ Superstar";
- There must be continuity of action throughout the selection period;
- Remember the candidate's first loyalty is to himself;
- If you cannot give a formal offer of employment now give a "letter of intent";
- Remember that as the selection period increases the chance of recruiting success usually declines;
- Consider that the cost of not recruiting is effectively equal to the expected profit from on-target performance;
- Bear in mind that a recruitment campaign from initiation to getting the required people on-board could take well over 10 weeks (which usually means you should have started at least a couple of months ago!)

Alan Williams

PUZZLE ANSWER

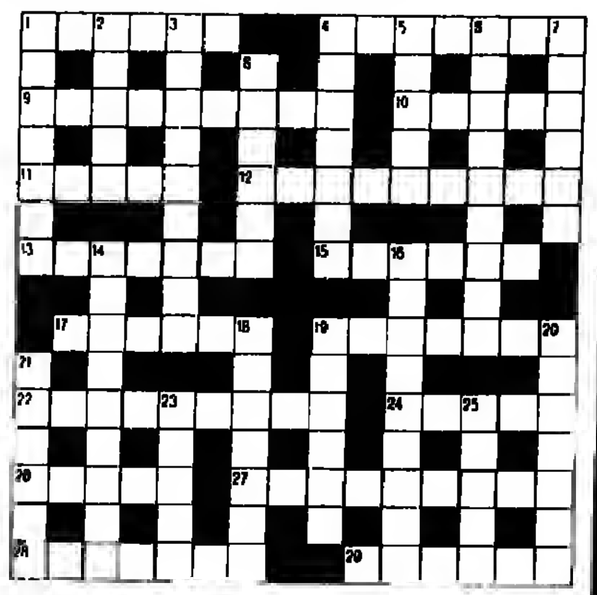
212/606 = .3498 (recurring). If 1 is not specified, there is another answer: 242/303 = .7986 (recurring).

CROSSWORD

Prize Crossword No 39

Compiled by Alec Robins

A prize of £10 will be awarded for the first correct entry opened. The second and third solutions opened will receive £5 each. Entries to Crossword Competition, Computer Weekly, Quadrant House, The Quadrant, Sutton, Surrey, SM2 5AS, by first post Friday, April 15. Please use a ballpoint to complete the crossword, and include a telephone number at which you can be reached during the daytime.



Name.......................................(Miss, Mrs, Ms, Mr)

Address..

....

Telephone...

I accept the rules and conditions of the Computer Weekly Crossword Competition.

Signed ....Date................................

ACROSS

1. Goodness! — Albert's in an overshoe (6)
4. One that wounds a leading actor about to go back in retirement (7)
9, 10. Rose, for example, loud, scowling, waving brush (9,5)
11. Something worth having when beside sink (5)
12. Reg quotes at random — it's fantastic (9)
13. Shiny material, mostly — truly light in tone (7)
15. Restrain noisy dog losing head (6)
17. Stableman having unusual role about the highway (6)
19. Nuclear development association regret recoiling at order (7)
22. Fundamental reason to shout encouragement at a trial (4-5)
24. Comfortable homes in South protected by meshed screens (5)
26, 27. Deal with tricky situation, and risk falling in pond? (5,2,4,3)
28. Cancels return of children without permit (7)
29. A mug, one likely to have a loaf around the East (6)

DOWN

1. Empty talk was stupid, causing coarse laughs (7)
2. Seems all right in the midst of deprivation, almost (5)
3. Kind of biscuit pudding *before* dinner? (9)
4. Discharge from employment, an indication of failure, initially (4,3)
5. A passage, a place that's insulated (5)
6. Cow-shed search, in response to petition (2,7)
7, 8. Masseur has hours in dark collapsible boat (6,6)
14. Sarah tripped up, to collapse — her position in the race? (4,2,3)
16. The girl is brought into Middle-Eastern port to act as despot (9)
18. Harsh, unrefined-sounding CO, American (7)
19. Incidents still upset good man (6)
20. Wrongly catch teacher in this place, d'you say? (7)
21. Forced a pay increase in new and old pence (6)
23, 25. Conservative and radical remain in a tight spot (5,5)

RULES AND CONDITIONS

1. Each competitor may submit no more than one entry.
2. The competition is open to all readers of Computer Weekly with the exception of the staff of IPC Business Press Ltd, any printers employed by them or the near relatives of any such staff.
3. The solution of each puzzle will normally be published in the issue three weeks after the puzzle has been published.
4. Winners will receive their prizes during the month following the competition.
5. The decision of the editor on the interpretation of the rules and conditions and on all matters shall be final. No correspondence will be entered into.

Manager

Information Technology Centre Cambridge £10,860 +

To help combat youth unemployment, Cambridge City Council is sponsoring the establishment of an Information Technology Centre. The aim is to train 30 unemployed young people annually in industrial microelectronics, computing and electronic office work. The development of marketable products and services and the wide use of the centre to meet the needs of the community will be encouraged.

A Manager is required to set up the Centre and be responsible for its day to day running supported by a team of five full-time staff.

The man or woman appointed must have management experience, an ability to liaise with a wide range of people, a knowledge of computer applications and programming and the enthusiasm to meet the challenge of this new concept.

Starting salary will be £10,860 but could be more depending on experience and qualifications. An attractive range of benefits includes assistance with relocation and provision of temporary accommodation, where appropriate.

Application forms and job description available from the Personnel Officer, The Guildhall, Cambridge CB2 3QJ or telephone (0223) 358977 ext. 270.

Closing Date – 29th April, 1983.

City of Cambridge

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PROGRAMMER

Manufacturing Engineering Co., seeking to expand Programming capacity, has vacancy for PROGRAMMER, with minimum of two years' experience in RPGII, living within daily travel of Hounslow. 37 hour week, no shifts, would consider reduced hours.

Please apply to Miss M. Frost, Personnel Manager

DUPAR

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Write for full details to; John Marjoribanks, Dynatech Microsoftware Ltd., Summerfield House, Vale, Guernsey, Channel Islands.

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TO £10,000
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(Out of hours answering service)

ata COMPUTER RECRUITMENT (3140)

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CONTRACTS

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ADF	PROGRAMMERS	SURREY
IBM COBOL IMS DB DL/1	ANALYST/PROGS.	SURREY
DEC DIBOL CTS 300	ANALYST/PROGS.	KENT

For further details contact NIC POLAND TLP (3188)

TLP
A division of Tate & Lyle Industries Ltd.
Leon House, High Street, Croydon CR9 3NH
Telephone 01-686 5656
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UK AND OVERSEAS CONTRACTS — ANALYSTS — PROGRAMMERS — PROGRAMMER/ANALYSTS

Opportunities are available for a number of contract and permanent candidates with the Tangent Systems and Software Group. Our support services are in demand by many client companies around the world. Amongst our current requirements are the following:

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IBM, COBOL, DDS or DS	Programmers	Herts.
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COBOL, CICS, JACKSON	Programmer	London
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ADABAS, NATURAL, OS, MVS	Programmers	London
DATADICTIONARY & DL/1	Database Administrator	Middle East
Accountant background	Systems Analyst	Middle East

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Please contact Adelle Sterling
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102/106 South Street
Romford, Essex RM1 1RX
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1 year+ Belgium

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Project — The project leader will co-ordinate the activities of a small team engaged in equipping a business computer, based on the Motorola 68000MP, with a new Cobol [illegible]

Experience — [illegible] skills and knowl[illegible] Cobol/Motorola [illegible]

SYSTEMS DESIGNERS [illegible]

[illegible]

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A prestige financial organisation with its international headquarters in Brussels is seeking a highly-skilled professional to take on a challenging and demanding technical advisory role. The successful candidate will enjoy senior level responsibility and will be given every opportunity to influence future dp strategy. Key areas of experience should include DOS/VS, MVS, CICS, DSL, VSAM and databases. This is an exceptional opening for an ambitious person to develop a career in a European environment. Ref CW/E/13

CONSULTANTS
Holland

A highly respected systems consultancy with a well-developed client base, is seeking professionals with a background in either process control, petro-chems., or graphics to provide high-level expertise to major organisations within Holland. Candidates will enjoy working in a problem-solving and advisory capacity and should be able to combine proven hardware/software expertise with strong communication skills. An ability to speak Dutch is not essential. An attractive package is offered including full relocation and co. car. Ref CW/E/14

CONSULTANT/PROJECT MANAGER
West Germany — U.K. based

A leading international consultancy with an impressive record of growth requires a German speaking professional to spearhead and develop a major initiative in W. Germany. Candidates should possess marketing and project management skills together with experience of real time systems and communications, minis/mainframes particularly IBM/Nixdorf or Siemens. Ref CW/E/15

SYSTEMS SOFTWARE SUPPORT
Southern Germany

A dynamic organisation with a highly successful range of Information Technology products is seeking specialists with the following: DOS/VSE and/or VM, CICS, ASSEMBLER together with Systems Prog. and client support skills. Situated in one of Europe's most beautiful areas they are able to offer both technical challenge, genuine career progression and a package which includes full re-location and 6 weeks' holiday. German language ability, whilst useful, is not essential. Ref CW/E/16

HONEYWELL ANALYST/PROGRAMMER
Belgium

To work in one of Europe's most exciting cities. Experience on Level 6 with Cobol and good analytical skills. Ref. CW/E/17

If you are considering an overseas move and have not seen a position to match your skills on this page, please call us anyway. We can probably help you.

CLIENT ENQUIRIES WELCOME

If you have a genuine motivation to take up the overseas challenge, call me, Ray Parker, without delay on either 01-491 4653 or contact me between 6-8 p.m. on 8/18 April on 01-680 7655. Alternatively, please forward your curriculum vitae. Initial telephone interviews can be arranged for those currently abroad.

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